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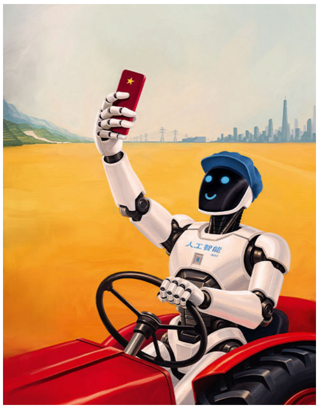

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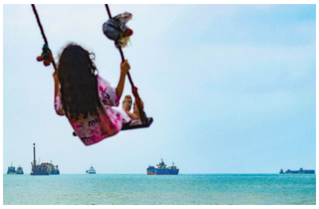

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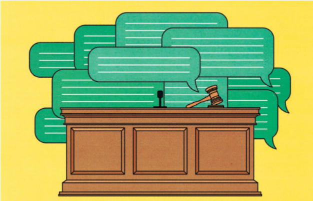

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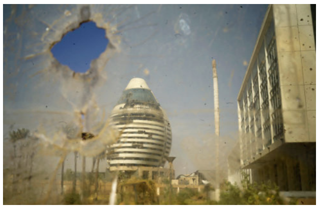

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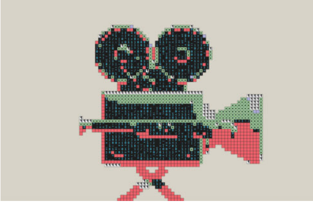

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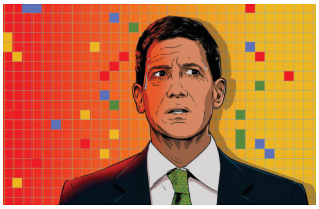

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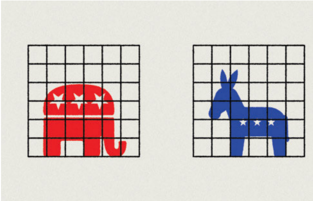

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to take part in *"a severe contest between intelligence, which presses forward, and an unworthy, timid ignorance obstructing our progress."*

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The world this week Politics

Spain's interior minister said that 70,000 of the 72,000 migrants who overran **Ceuta**, a small Spanish enclave in northern Morocco, had returned to Morocco. At least 141 people drowned attempting to enter the territory. The extraordinary breach of security created a sense of crisis in the European Union and caused Italy and other countries to say they would suspend co-operation in the Schengen border-free zone with Spain. Pedro Sánchez, Spain's Socialist prime minister, accused critics of inflaming the situation. Ursula von der Leyen, president of the European Commission, praised Spain's response and swift return of the migrants.

Russia bombarded Kyiv again with drones and ballistic missiles, killing at least 17 people. America is holding discussions with **Ukraine** on allowing the country to make Patriot missile-defence systems, which Ukraine urgently needs to intercept Russian weaponry. After initially saying he would support such a deal Donald Trump now says he has doubts about giving away the technology. Ukraine, meanwhile, attacked more warehouses belonging to Wildberries, a Russian retailer that the army uses as a logistical hub for equipment. At least five people died. And a Ukrainian drone missed its target and killed at least seven people on a Russian beach by the Black Sea.

Volodymyr Zelensky continued the shake-up of his senior officials, dismissing Olha Stefanishyna as **Ukraine's ambassador** to Washington. Ukrainian media reported that she was being investigated for alleged irregularities in declaring her assets. Ms Stefanishyna has not been charged.

Russian authorities said that a woman who delivered a bomb to a restaurant in **Moscow** had died in the blast. At least two other people were killed. The restaurant is located in Kudrinskaya Square, an affluent area of the city. Speculation swirled that the target was a senior Russian commander, who had survived the explosion.

Twisting in the wind

Donald Trump again threatened to hit **Iran** very hard if it did not open the Strait of Hormuz. Oil prices fell after Qatar said a draft agreement between America and Iran to reopen the waterway had been circulated and that negotiations were in "very progressive stages". The Trump administration claims to be involved in discussions with Iran and Oman about Hormuz. Iran denies negotiating with America, but said it had agreed on a transit route with Oman.

Hamas and all other armed groups in Gaza agreed to a complete disarmament, according to Mr Trump. Hamas said that it was not disarming; it would merely be putting its weapons into storage under Palestinian supervision. Binyamin Netanyahu, Israel's prime minister, said his government was "looking into it". Unnamed officials said that Israel would not cease operations in Gaza or withdraw from the strip.

A court case got under way in **South Africa** that challenges the government's law for expropriating private land, sometimes without compensation if an agreement cannot be reached with the land's owners. The law has formed the basis of Mr Trump's claim that white farmers are being harassed. The Democratic Alliance, which is part of the governing coalition led by the African National Congress, has joined the case challenging the law.

Progressive **Democrats** scored another victory in the primaries when Abdul El-Sayed defeated Haley Stevens in Michigan to become the party's candidate for the Senate in the midterms. Dr El-Sayed drew support from Democratic Socialists. Ms Stevens was backed by the party's establishment. Israel was a big issue for the left-leaning primary electorate. But the left-wing is not getting it all its own way. Wesley Bell, a pro-Israel moderate congressman from St Louis, survived a challenge from a progressive candidate in his primary.

Diplomatic relations between **Brazil** and the United States worsened, after the Brazilian president, Luiz Inácio Lula da Silva, better known as Lula, accused two State Department officials of trying to meddle in the country's elections. In response America cancelled the visa of Brazil's ambassador in Washington. Brazil's relations with **Argentina** also deteriorated, after the Argentine president, Javier Milei, again criticised Lula, calling him a "thief" and "corrupt".

Talks backed by America got under way in **Venezuela** on holding democratic elections. The Venezuelan government's lead negotiator is Jorge Rodríguez, the head of the National Assembly and brother of Delcy Rodríguez, who became president when America removed Nicolás Maduro from power in January. The opposition is represented by Dinorah Figuera, who has returned from exile. María Corina Machado, who is still in exile and leads the opposition Unitary Platform, has said success will be measured by the establishment of free elections. Meanwhile, the death toll from June's earthquakes rose to 6,125.

Sheikh Hasina gave a big speech, two years after she was ousted as **Bangladesh's** prime minister and fled the country amid a series of deadly protests against her government. Speaking in India to journalists, Sheikh Hasina reiterated her vow to return in December to Bangladesh, where she has been sentenced to death in absentia for her crackdown on the student-led protests.

Tehreek-e-Taliban, an Islamist terrorist group in **Pakistan**, claimed responsibility for a suicide-bombing in the Swat valley, close to the border with Afghanistan, which killed 17 people. The bomb went off near a rally that was being held to demand more police protection from terrorist violence.

Myanmar's military rulers allowed **Aung San Suu Kyi** to meet an official from the International Committee of the Red Cross and released photographs of the event. The authorities have not granted much outside access to Ms Suu Kyi since she was overthrown as the country's de facto leader in a coup in February 2021. She has been kept in detention ever since and rumours had swirled that the 81-year-old was gravely ill, or even dead.

A bitter brew

In **South Korea**, police raided the headquarters of Starbucks Korea, as the backlash over a marketing campaign in May showed little sign of receding. The company had promoted a "Tank Day" gimmick, which was seen to be making light of a pro-democracy protest in 1980 at which hundreds were killed. The firm has apologised but that hasn't stopped criminal complaints being filed against it. Its mishap has turned political. Right-wingers brandish Starbucks cups to mark their opposition to Lee Jae Myung, the president.

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The world this week Business

Britain's AI Security Institute, a government agency, reported that an "**AI agent** took autonomous, unsanctioned action on the live internet, targeting real people and organisations" during a test. This included creating fake identities. Seventeen actions came from Anthropic's Mythos 5 model and two involved OpenAI's GPT-5.6 Sol. The institute said it was "the first time we have seen risks around autonomy and deception manifest this clearly, without specific prompting, in the real-world". Some of the models' safeguards had been disabled as part of the test. Meta became the latest AI company to announce that it, too, had experienced a rogue-AI incident.

Sir Demis Hassabis is stepping down as chief executive of Google's **DeepMind** AI laboratory to be its chairman. He will also become senior scientist at Alphabet, suggesting that DeepMind will be more closely integrated with Google.

Re-entering the atmosphere

SpaceX released its first set of earnings since its IPO in June. Quarterly revenues almost doubled from the same period last year, to $7.8bn, and a net loss of $541m was smaller than had been feared. But SpaceX's share price sank because it spent $16bn on AI, well above Wall Street estimates. The stock is now trading below $110, down from a peak of $225 after the IPO. Meanwhile, scientists used the crash of a discarded SpaceX rocket into the Moon's surface to update their data on meteor impacts.

America's Treasury Department joined Japan in intervening to help **prop up the yen**, by instructing the Federal Reserve of New York to buy the currency through American banks. It was the first time since 1998 that the Treasury took action to strengthen the yen, which had fallen to a 40-year low of 164 per dollar. After the intervention the yen traded around 155 to the greenback.

Saudi Aramco warned that global oil stocks are running low, despite some success in rerouting shipments away from the Strait of Hormuz to Red Sea ports. More than 2.6bn barrels have been lost in production because of the Iran war, Aramco's boss said, tantamount to a month's output of crude. Still, Aramco's second-quarter net profit jumped by 44%, year on year, to $32.7bn, reflecting higher oil prices.

Net profits also soared at **Chevron** and **ExxonMobil**, to $12.1bn and $14.5bn respectively. Donald Trump griped about the companies "making too much money" from the global shortage of oil supplies. **BP** reported a 144% increase in headline profit, to $5.7bn. The company continued its restructuring, putting its struggling American biogas business up for sale. BP also announced that it is to sell its assets in the North Sea, exiting a business it has been in for over 60 years.

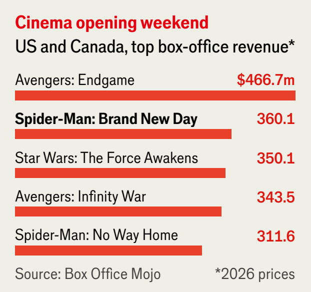
Eli Lilly's sales of Mounjaro and Zepbound, marketed as weight-loss treatments, soared in the latest quarter. Sales of **Novo Nordisk's** Wegovy pill, which it launched in January, slightly missed analysts' forecasts, sending its share price down. Novo Nordisk's stock has fallen substantially since hitting a peak in 2024.

Delayed departure

America's Federal Aviation Administration certified **Boeing's** 737 MAX 7 aircraft, after years of delays in which it investigated possible safety issues. The planes were subjected to increased regulatory scrutiny following fatal crashes in 2018 and 2019 of two 737 MAX 8s. Southwest Airlines, which has a big order for the MAX 7, is expected to start flying it next year.

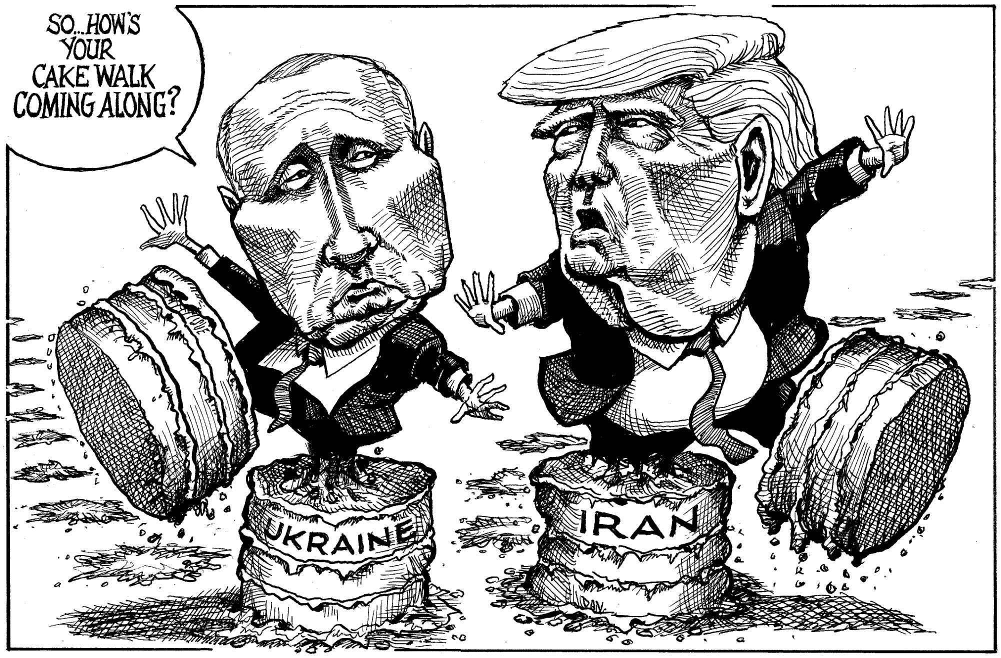
The Trump administration has refunded about $100bn in Liberation Day **tariffs** since the Supreme Court ruled in February that the duties were illegal. Some $165bn in tariffs were collected in total under the authority. Meanwhile, a group of 25 states sued to halt Mr Trump's latest tariffs, which were issued under a different legal authority to those that were struck down. "Tariffs are taxes," said the states, and increase the cost of living.

Amazon's market value rose briefly above $3trn for the first time, after it reported bumper earnings driven by demand for its cloud-computing services.


Cinema opening weekend
US and Canada, top box-office revenue*

Source: Box Office Mojo *2026 prices

"Spider-Man: Brand New Day" broke the opening-weekend box-office record in the United States and Canada, taking $360m (when adjusted for inflation, Spider-Man's latest adventure drops behind the Avengers). Opening weekends cement a movie's success; films that don't do well initially now move quickly to streaming. "Supergirl" is already available online just a month after failing to take off on the big screen. But Spider-Man is a bankable box-office franchise in an overcrowded superhero genre. Globally, "Brand New Day" has already taken more than $1bn in under a week. Fans will be happy to hear that their friendly neighbourhood Spider-Man will be swinging into action again next year.


SO...HOW'S YOUR CAKE WALK COMING ALONG?
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Lessons from China

AI will test societies' capacity to reinvent themselves. Communist China will not find it easy

JUST AS FRONTIER artificial-intelligence models are benchmarked against each other, so AI will itself benchmark the rival political systems of America and China. The technology will test which is better at creating AI tools and diffusing them through the economy. And that will in turn depend partly on their very different ideas of how societies should be run.

Even in a field changing as rapidly as AI, the results of that contest may not become clear for some years. But as we report from inside China (see Briefing), the country is already adopting AI fast—and its government is preparing for the dramatic economic and social change this heralds. As an autocracy, China has some advantages in harnessing the 21st century's most promising technology. It also has plenty of problems.

Start with the calibre of China's models. The common perception is that they are cheap and that even the best persistently lag behind America's. In fact, the two countries' AI models are converging. Innovative Chinese models are getting bigger and cleverer. Within the past few weeks Chinese labs have released Qwen3.8-Max and Kimi K3, which almost match the most advanced American AIs such as Anthropic's Fable 5. Chinese models will be just as likely to break loose from their test beds as American ones (see Science & technology section).

Although Chinese models are cheaper, American models are often better value. Artificial Analysis, an American firm, finds that for most trade-offs between cost and intelligence, an American model outperforms Chinese ones.

The convergence is likely to continue. Although China is building only a tenth as much data-centre capacity as America (see Finance & economics section), that deficit is unlikely to last. As a semi-planned economy, it is good at creating infrastructure. While American opinion turns against data centres, South-East Asia is hosting huge Chinese facilities. China's open-weight models can run on anyone's servers, meaning that compute is less of a problem than the headline numbers suggest. China also has almost three times as much installed electricity-generating capacity as America, and its lead is growing.

China is learning to cope with sanctions. It smuggles in cutting-edge Nvidia chips and rents them in foreign data centres. And Huawei, its best chip-designer, is rapidly increasing the output of its (inferior) chips. Chinese-made lithography tools are now using deep UV light to print chips, though the best technology, using extreme UV, remains out of reach.

Model-building is only half the story. To make the economy dynamic, AI must also be deployed—the focus of Chinese AI policy. For as long as China was behind America in model-making, leaders saw diffusion as the best way to compete. But they may also believe that, as with other broad technologies such as electricity, adoption brings greater rewards than discovery. China's working-age population is due to shrink by 25% by 2050; for machines to replace people requires diffusion, too.

So far, the use of AI has yet to show up in the economic statistics of either America or China. But change in some industries has already been sweeping. AI-assisted lorries will need 30% fewer drivers, going by one large firm's experience, as crews slim from two drivers to one and from four to three. AI was used to generate 95% of the 128,000 wildly popular one- or two-minute-long microdramas released in the first quarter of 2026, replacing many actors and film crews.

China is also rapidly increasing the use of robots. In June leaders told local governments and state-owned enterprises to have 10,000 humanoid robots doing real work by the end of 2026. Morgan Stanley, a bank, expects humanoid sales in China to reach 446,000 by 2030, nine times this year's total. Workers are being paid to train robots in huge warehouses by repeatedly folding clothes and sorting and stacking objects.

China has a lower share of white-collar workers than America, so AI is likely to have the greatest effect in consumer markets and blue-collar work. That could easily lead to discontent. Youth unemployment is already around 15%, and over 300m people work in the gig economy. Job destruction could be much faster than China's demographic decline.

You might think that the Communist Party's grip on power is so strong that it can ignore the blowback. However, dictators fear being brittle. Although Chinese firms want to roll out AI fast, the government will be desperate to avoid instability.

That is why AI will be a test of the system—and why China's options are limited. As in America, there is plenty of talk about retraining. However, retraining has a poor record (see United States section) and even the most successful countries, like Denmark and Singapore, struggle to equip workers for entirely new careers. There is no reason to think that China will be any more successful, especially as it already has too many graduates.

Prominent economists and advisers suggest extending the social contract by, say, taxing AI firms or creating a universal basic income. Their work has appeared in party journals, an official expression of interest. But President Xi Jinping has long been against handouts, saying they can lead to laziness.

Political leaders are pressing companies to redeploy staff rather than sack them. They may also ask state-owned companies to mop up surplus labour. Yet, although that is politically possible, it will cancel out some of the benefits of rapid diffusion at a time when domestic growth is already anaemic.

So the government may improvise, letting AI rip until there is trouble, when it will step in. That is what happened with tutoring and gaming, industries thrown into confusion overnight when the party decided that they were causing too much harm. Cautious officials recently slowed robotaxi experiments after more than 100 malfunctioned in Wuhan, leaving passengers stranded. However, stop-start AI may impair the ability to innovate. If so, China's leaders may have to balance the risk of social instability with the risk of falling behind America.

AI poses similar challenges to America and China. Both societies will have to reinvent themselves. That is something democracies tend to find easier than dictatorships. ■

Technology and government

How AI is breaking the state

Equipped with models and agents, citizens could bring government to a halt

THE BRITISH state is struggling. Railways go unbuilt and potholes unfilled. Welfare bills go up and shoplifters go uncollared. Andy Burnham, the new prime minister, says he can get Whitehall moving; but then again, so did the previous guy. Yet the British state's ability to function is about to get dramatically worse—a warning to rich democracies everywhere. Citizens frustrated by the poor deal they get from the authorities are turning to artificial intelligence to file objections and appeals, and claim their dues. The resulting deluge of complaints, and demands, will overwhelm bureaucracies built for the age of the post and the telephone. Too little is being done to prevent the state from drowning.

This inundation has been dubbed "agentic flooding", and its tides are lapping at bureaucracies everywhere, from tax appeals to welfare claims to parking tickets. The waters are rising alarmingly fast in Britain. As we report this week (see Britain section), while worries about AI dwell on the threats to safety and jobs, the backlog in employment tribunals has quietly risen by 55% in a year, in large part due to AI-fuelled claims. Demand for emergency injunctions has surged 100-fold. And the AI tide has only just begun to come in.

Britain has long pioneered new political models, from the welfare state in the 1940s to the "third way" in the 1990s. It is also unusually vulnerable to the march of AI-armed citizens, because its administrative traditions favour the written submissions that AI is so good at drafting. And so the state must now innovate once again. The good news is that some in Mr Burnham's cabinet grasp the scale of the challenge. Whether they can rise to it will show whether Britain can once again be a model to emulate, or a cautionary tale.

Amid low growth, an ageing population and rising defence bills, the state is sputtering in many ways, leaving voters convinced that they are getting a raw deal. But those familiar fiscal problems are at least slow-moving and can be forecasted. Agentic flooding is different. It strikes fast and where you least expect. It does not just damage the public finances; it will also clog the cogs that drive the machinery of state.

AI is superb at dealing with bureaucracy. It can digest small print, ferret out loopholes and draft appeal letters in seconds. Autonomous AI agents will accelerate the trend, filing tax complaints with minimal intervention. Unlike humans faced with officialdom, AI agents will never lose their temper—or the will to live. Officials complain about AI "slop" and hallucinations, but as the technology improves they will face the opposite problem: demands as well-crafted as a first-class lawyer's.

At first sight this looks like a cracking result for fed-up citizens. No one likes parking tickets. The poor could exercise their lawful rights as successfully as the sharp-elbowed middle classes do today. Yet it threatens to become a tragedy of the commons. If the state is overwhelmed and cannot function, everyone loses. When 20th-century governments created broad rights, they had the noble ideal of making citizenship meaningful. The public would be heard in consultations, get information under transparency laws and win redress for maladministration from a panoply of ombudsmen, tribunals, commissioners and judges. But these analogue systems assumed that few people would have the time or temperament to pursue their rights to the bitter end; and that of those who did, few would have the money to pay for a lawyer.

AI is changing that, in effect making professional-standard petitioning quick and costless. Yet as each petitioner pursues their own interests, the state will buckle. Britain's labour laws are becoming increasingly expansive—a problem in itself—but they will not be much help to aggrieved workers, because plaintiffs face a four-year wait for a tribunal hearing. An onerous planning regime is meant to produce handsome towns; paralysed by AI objections, nothing will get built at all. Britons under-claim the benefits to which they are legally entitled by as much as £20bn ($27bn), or 0.7% of GDP, a year; if everyone gets their dues, the public finances will wilt. The prospect is of a doom-loop of complaints and worsening services. More and more people may come to believe that the only way to get a result is to pull strings or cheat. Amid the inevitable anger and discontent, populism will thrive.

So politicians need to grapple with agentic flooding now, before the tide rises further. One step is to stop creating entitlements that are ripe for AI-fuelled claims. Britain's Employment Rights Act and Renters' Rights Act open avenues of legal challenge for workers and tenants. Not only are they misguided, but ministers put little thought into how they would burden the courts.

Another step is to prune the mass of procedural rights that have accreted over decades. To make the state less vulnerable requires tightening rules, closing loopholes and creating disincentives to AI-enabled excess. Byzantine, vague appeals systems should give way to simple, precise and limited ones. Money should be part of the solution. Britain could charge a fee for freedom-of-information requests, as other countries do. So could employment tribunals, which should also be more able to award costs against opportunistic claims.

The new LevAIthan

The most important task is to act faster and more radically on remaking the state with AI. That means not just speeding up the old cycle of applications, decisions and appeals, but replacing it altogether. The recast state would be flood-proof; it would also be more efficient and more responsive to citizens' needs. Politicians promise to be radical, but their solutions are incremental. Rather than just handling locals' objections, a new AI-driven planning system could decide for itself whether a housing development meets a zoning code. Rather than processing benefits claims, it could devise personalised welfare interventions. Freedom-of-information requests could give way to transparency-on-demand. The state risks being swamped by agentic flooding. Even if the state's rapid adoption of AI alarms some people, it is essential. ■

Reopening Hormuz

Open the strait and seize the day

Gulf states should strike a deal with Iran on Hormuz, however unpalatable

The Gulf states are caught in a mess of Donald Trump's making. After more than five months of war, the Strait of Hormuz is still mostly closed. A familiar pattern has emerged. When talks between America and Iran fail to yield progress, the two sides return to fighting; when bombs fail to break the deadlock, negotiations resume. In recent days Mr Trump has once again both talked up a deal on Hormuz and threatened to hit Iran "really hard". He gave Iran "one last chance" to reopen the strait. Once again.

Iran, however, still insists on near-total control of the waterway. Its exasperated neighbours seem to hold out little hope that it will soften its stance—or be forced to do so. Even a new regime in Tehran, supposing one sprung up, may be unwilling to surrender its new prize.

Instead, Gulf countries are racing to make the Strait of Hormuz obsolete. Saudi Arabia and the United Arab Emirates are both building or expanding oil pipelines to bypass the strait; Iraq plans to divert its barrels north. American and Saudi investors are considering a giant refinery outside the strait. Such workarounds will help. But, as our "Hormuz dependency dashboard" shows (see Middle East & Africa section), this quest for resilience unfortunately has its limits.

Pipeline projects are often delayed (see Business). Yet even if all the plans were completed on time, by 2030, 5m of the 15m barrels a day (b/d) that crossed Hormuz before the war would still have to pass through it. Besides, pipelines can be struck by Iran. Relying on them risks exposing Gulf suppliers to other choke points, not least the Bab al-Mandab strait in the Red Sea where the Houthis, Yemen's Iran-allied rebels, are firing at ships. Like Iran, they have charged ships fees before and may do so again (though they deny this).

Don't forget all the commodities besides crude oil. Without Hormuz, Qatar still cannot ship its liquefied natural gas—a fifth of the world's supply. Gulf refineries remain largely cut off. And that is only on the export side, the part of the ledger that most concerns the outside world. From the point of view of the Gulf countries, many of their critical imports, from food to metals, cannot be sent cheaply overland.

Pipelines are worth building, but Gulf countries should also spend more on defending them, and hasten work on other alternatives. All these fixes will take time. For now, the Gulf states need their ships to traverse Hormuz unharmed. America's bombs have not been able to accomplish this. One drone strike is enough to deter most ships, and jack up insurance premiums.

The only realistic way out is a deal, however unpalatable. Iran wants to manage the strait jointly with Oman, a more pragmatic government. Negotiating an agreement might give Gulf countries a chance to register their red lines and demands. Gulf countries might have no choice but to pay transit fees. Shipowners would probably tolerate them so long as they did not fall foul of sanctions. That means America needs to be on board.

Such a settlement would probably be fragile. International law says that maritime trade should be safe and free. A multilateral deal involving China, which has an interest in keeping the strait open and could restrain Iran, would be more durable. But that looks unlikely for now. Nor does Iran yet seem ready to accept a return to the status quo in the strait. Still, if a deal, however limited and unbalanced, lowers hostilities and buys Gulf countries time to build workarounds and defences that reduce Iran's leverage, it will be worth having. Iran looks likely to win this battle. But it may yet lose the longer war. ■

The bond market

Onwards and upwards

Bond yields are high. They are likely to get higher

After a steady upward climb this year, 30-year bonds in America, France, Japan and Britain are all near their highest since the global financial crisis of 2007-09. That feat is particularly impressive for Britain, where the highs during a fiscal panic in 2022 have been long surpassed. For anyone who was wondering if yields would return to the lows of the 2010s as inflation fell after the pandemic, markets appear to have supplied a decisive answer: they will not. If anything, they are likely to climb higher still.

The culprits are clear. Inflation has not quite been beaten, deterring central banks from cutting interest rates. Even Japan is leaving behind its loose-money policies (though not enough to strengthen the yen, which both Japan and America have propped up with official purchases). Gaping rich-world budget deficits show little sign of narrowing meaningfully, raising the possibility that governments eventually force central banks to inflate their debts away. Geopolitical ructions, like the Iran war and tariffs, are lifting the compensation for risk that investors demand. It does not help that Kevin Warsh, the new Federal Reserve chair, fumbled an early encounter with the markets (see Finance & economics section).

High bond yields are a problem for indebted governments. Every percentage-point rise in America's bond yields, for instance, costs it extra interest payments worth 1.3% of annual GDP within a decade. Yet it is getting harder to imagine governments making cuts to offset the squeeze. In America each

▸▸

political party seems to be hoping that any debt crisis lands on the other. France's presidential election next year could become a fight between populist parties on the left and right. Japan is, bizarrely, undertaking a fiscal stimulus. The longer governments wait to adjust, the bigger the adjustments become.

Governments look increasingly as if they are betting on economic growth to pay the bills—which today means a bet on AI. The trouble is that faster growth, by boosting investment, usually brings higher interest rates and higher bond yields. Today higher market rates have arrived before faster growth. The sheer scale of data-centre investment, pegged at $1trn this year by Goldman Sachs, a bank, is making capital scarcer and helping raise yields. However, AI has yet to boost productivity measurably, even in China where diffusion of the technology is arguably the furthest along (see Leader).

It could be a while before the boost comes. Electricity and computing took decades to raise productivity growth perceptibly. Not all economies will fare equally well, either. Europe's fiscal woes could worsen if AI brings more growth for America, pulling up global interest rates, but gets jammed up in the old world by rigid labour markets and high energy costs. That would mean costlier debt without any more growth.

There is another problem, too. If the productivity boost from AI is large enough to transform any country's fiscal arithmetic, vast job disruption is probably coming, meaning more spending on unemployed workers (see United States section). Income may also shift from labour to capital, which is more lightly taxed. Should AI prompt an arms race, countries will also need more defence spending. Even the exciting prospect of longer lifespans, fuelled by AI-powered scientific advances, would raise state spending on pensions. Economists at the Brookings Institution, a think-tank, reckon these factors plus higher interest rates could more than halve the positive impact of AI-induced growth on American deficits.

The last time much of the rich world, including America and Britain, ran budget surpluses was at the turn of the millennium. That required fast productivity growth, which came from computers and the early internet. But deficits had to be cut, too. Without fiscal prudence, bonds are a punt on AI that looks just as risky as betting on wobbly tech stocks. ■

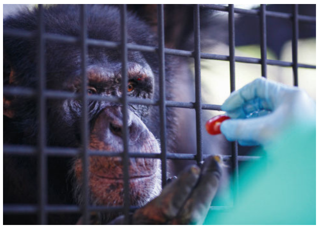
Animal-testing bans

Bipartisan and wrong

Republicans and Democrats uniting against animal testing are misguided

IT SHOULD BE a relief when America's Democrats and Republicans find common ground. But one emerging area of bipartisanship is disturbing. Members of both parties increasingly oppose scientific research on animals. If they succeed in stopping it, they will prevent America from helping advance the welfare of the most valuable animal of all: humans.

Animal welfare may seem a cause for sandal-wearing lefties. But it has long had advocates on the right and far right. MAGA has embraced the crusade (see Science & technology section). Robert F. Kennedy junior, the health secretary, has vowed to end all animal experimentation, and under him the Centres for Disease Control and Prevention is closing its primate laboratory. The navy has banned funding for scientific research on cats and dogs.



The federal government is joined in the cause by plenty of Democrats—whose party otherwise sees itself as differing from Republicans by being committed to enlightened science. In Oregon Democratic politicians stand with Donald Trump's appointees in trying to curtail research and shrink the monkey colony at America's largest federally funded primate-research centre.

The surge in opposition to testing partly reflects queasiness about the ethics of experiments on animals (never mind their enormous contribution to human health). It also results from a growing belief in a new generation of technologies that is transforming biomedical science. So-called New Approach Methods (NAMs) include organs-on-a-chip, organoids and artificial-intelligence models. In some areas NAMs are indeed making drug discovery faster and cheaper without using any animals. Liver-chips, for example, can use human liver cells on miniature devices to help identify toxic medicines before they ever reach an animal study.

Yet it would be a mistake to think NAMs are anywhere close to rendering animal testing at scale unnecessary. Replicating small parts of human biology is not the same as reproducing all of it. Consider vaccines. They are among humanity's greatest biomedical achievements, having saved an estimated 154m lives since 1974. Yet developing a vaccine entails finding and exploiting a complex biological pathway. Scientists have only just managed to mimic the first steps of this investigation on an organ-chip. Finding out the rest is still a process that depends on testing in both animal and human subjects. It is the same story with many other life-saving medicines.

There is also a practical reason to keep on testing. If America's laboratories are shut down, leadership on biotechnology will pass to China. Its biotech industry is growing rapidly, and it has recruited leading American scientists who have faced funding cuts, regulatory barriers and political hostility at home.

China is also buying up research monkeys at a staggering rate, raising their price and squeezing American labs' budgets. The ambition of China makes the campaign for animal rights self-defeating. If American labs stop testing, the work will only migrate to a country that has lower animal-welfare standards.

In future, NAMs may be able to displace more animal testing as technology advances. In the meantime animal welfare can be enhanced in labs. America's decades-old primate centres should be modernised with bigger, more naturalistic enclosures for monkeys that allow in more daylight. Wearable monitoring technologies would reduce the need for handling, lowering the animals' stress and improving the quality of the data they produce. This will cost money. All the more reason to keep funding animal research rather than cutting it off. ■

Conflict in Africa

The forgotten war

Sudan is mired in one of the century's worst conflicts. This is the moment to strike a truce

IT MAY BE impossible to find a single place that sums up the devastation caused by Sudan's civil war, now deep into its fourth year. But as we report after a rare trip to the country (see International section), its ruined capital comes close. Before the war erupted in April 2023, Khartoum was a bustling city of around 7m people. Today its centre is deserted. Bare husks remain of government buildings. Smart homes and luxury hotels are in ruins. The streets, charred by fighting, are silent. So many bodies have been dumped that human skulls spill out of makeshift mass graves. And still the killing continues.

Khartoum is the scarred heart of one of Africa's worst conflicts this century. War has destroyed swathes of the continent's third-largest country and driven 14m people from their homes. Hundreds of thousands have probably been killed by fighting, famine and bursts of genocidal violence. The only recent African war whose horrors are comparable is the one in Congo, which may have killed more than 5m people in the early 2000s. Yet the war in Sudan is even more important geopolitically. As we warned two years ago, it has drawn in neighbouring countries, helping reignite civil wars in South Sudan and Yemen and threatening another round of killing in Ethiopia.

Outsiders have shown callous indifference to the suffering, by paying to keep the fighting going or neglecting it. Yet by endangering shipping in the Red Sea, the wars in Sudan and Iran are overlapping. That may raise the cost of prosecuting the war to its sponsors, giving them a reason at last to seek to bring about peace.

On the face of it, Sudan's war is a conflict between two main belligerents: the Sudanese Armed Forces (SAF), the country's regular army and de facto government; and the Rapid Support Forces (RSF), a rich and well-equipped militia. Various other Sudanese groups are allied with the two sides. Yet the fighting is also a proxy war between deep-pocketed regional powers vying for resources and influence. The RSF receives weapons, money and mercenaries from the United Arab Emirates (UAE), though the UAE strenuously denies providing it with support. To a lesser degree, the SAF is armed and bankrolled by Egypt, Qatar, Saudi Arabia and Turkey.

Until very recently, all these actors had an overwhelming interest in keeping the war going. The RSF has periodically claimed to be ready for ceasefire talks, but has used its spoils to grow into a military and economic empire with ambitions to rule the country. And our conversations with SAF leaders in Sudan give every impression that they continue to believe they can vanquish the RSF and hence oppose talks.

Meanwhile, outsiders with the power to exert pressure on the belligerents and their supporters have been distracted. Europe is focused on Ukraine. President Donald Trump, who last November vowed to end the war, is caught up in his disastrous campaign in Iran. Many Sudanese, resigned to being treated as a lost cause, have begun to speak of a "Somalia timeline": a decades-long conflict with no end in sight.

Now two developments have combined to create a chance of ending the war—albeit a slim one. Since America attacked the Islamic Republic in February, chaos in the Gulf has mostly made Sudan an even lower priority than usual. Having a shared foe in Iran did little to dampen the rivalry between Saudi Arabia and the UAE that is playing out in Sudan.

But as Dwight Eisenhower, a former American president, supposedly once said: when a problem cannot be solved, enlarge it. As the Iran war expands, attention is moving from the Strait of Hormuz, which remains closed for the moment (see Leader), to the Red Sea, which may soon be. In recent weeks the Houthis, an Iran-backed militia in Yemen, have launched attacks on oil tankers linked to Saudi Arabia, leading to a sharp reduction in shipping through the sea's Bab al-Mandab strait.

So far, Saudi Arabia and the UAE have treated their contest in the region as zero-sum. Yet recent attacks in the Red Sea have further underlined the importance of Sudan's coastline for Saudi Arabia, reviving its interest in the war. That could make it costlier and riskier for the UAE to keep up its backing for the RSF, which could open the door to a truce in Sudan becoming part of a wider settlement in the Middle East.

The second factor is a turn in fortunes on the battlefield. In the past two weeks the SAF has made its most telling breakthroughs since its return to Khartoum 18 months ago. In late July it regained control of a key highway connecting the capital to el-Obeid, a strategic regional hub which the RSF has been trying to capture for months. It has also retaken Kurmuk, a town on the border with Ethiopia.

Although it may now be tempted to double down on trying to defeat the RSF, the army has also long argued that it wants to negotiate from strength—a position it now holds. Moreover, the longer the search for a ceasefire is delayed, the less likely it will be to stick. The two sides comprise dozens of militias. The SAF knows that, as the war drags on, more power will drain away to groups with a stake in perpetuating the war economy. Fragmentation will follow, whoever is in charge.

True, the chances of a successful ceasefire are small. But the time for a diplomatic push is now. For the next month or so, Sudan's rainy season means that there will be a lull in the fighting. A "humanitarian truce" proposed by Massad Boulos, Mr Trump's overstretched Africa envoy, has a better chance of holding while the battle lines are relatively static.

Seize the moment

America and Europe should lean on their Gulf allies to press the belligerents they support to talk directly to each other for the first time. Saudi Arabia, Egypt and Turkey should urge the SAF to stop insisting the RSF disarm and demobilise before negotiations can begin. The UAE should use its influence over the RSF to hold it to its professed desire for a ceasefire—even if that means abandoning the ambition to rule all of Sudan.

The Somalia-style trajectory towards further fragmentation would perpetuate the suffering and instability the war is causing. This is the last best chance to prevent it. ■

Letters *Elon Musk, household income, Africa's cities, Claudette Colvin, pubs, prediction markets, AI-generated text*

Policy consequences

Elon Musk insisted that "zero" children had died in Africa because of the Trump administration's cuts to USAID (The Insider interview, July 23rd). Mr Musk argued that other organisations could have stepped in. "They are capable of acting very quickly," he said, "and if they didn't, I would say they're equally responsible."

The effects of the cuts were in fact visible on the ground, but also large enough to see from space. Researchers tracked satellite night-time lights around 1,374 former USAID project sites in 50 African countries. The places that had depended most on that money dimmed relative to the rest, and the share of people living in food crises rose.

Whether the number of lives lost is zero, ten or ten thousand, Mr Musk's defence rests on a morally bankrupt premise: that one is absolved of responsibility for the foreseeable consequences of one's actions so long as someone else could, in principle, come along afterwards and clean up the mess. Grant him the impossible, that not one person died, and the moral reasoning is still wrong.

Moreover, even if the Gates Foundation or MacKenzie Scott had been able to fill the gaps in emergency aid to Africa, it would have diverted dollars from their programmes tackling malaria, tuberculosis, childhood nutrition and so forth. Philanthropic budgets are finite. Foundations exist to fund what governments will not, not to serve as insurers of last resort whenever a government abandons commitments it already made.

Could USAID have been better? Of course. Even its most ardent supporters had ideas for improving it. I did not join as chief economist because I saw a bastion of efficiency. I joined because I wanted to help make it better. And when I arrived I found plenty of people inside with the talent and drive to do exactly that, alongside the expected administrative, bureaucratic and political obstacles that made it hard, but not impossible, to do so. While the USAID debate will fade, Mr Musk's philosophy should be loudly and for ever rejected.

DEAN KARLAN
Professor of economics
and finance
Northwestern University
Evanston, Illinois

It may be a bit premature to take Mr Musk's forecasts seriously. Consider his record on full self-driving cars, for which there is a devoted Wikipedia page. In 2013 he said 90% of the miles in a Tesla car would be self-driven by 2016. In 2015 he predicted that Tesla would have complete autonomous driving by 2018. In 2016 the date slipped to 2019. Since 2020, it has been "this year" every year. The latest prediction is December 2026, a decade later than he first expected.

Mr Musk is a formidable innovator. But on self-driving cars, as well as Mars, data centres in space, robots and AI, we should treat his prophecies with caution.

PATRICK GRADY
Brussels

You dismissed Mr Musk's suggestion that chess and gardening might sustain the human spirit in an age of AI, noting that a "feeling of being superfluous can lead to misery and moral decay" ("Should you be afraid of Elon Musk?", July 25th). Permit a dispatch from a profession that has been economically superfluous for more than a century. Since the phonograph, every note an orchestra plays has existed in a superior recording at negligible cost. By the logic of usefulness, live orchestras should have disbanded around 1910. Instead the halls keep filling, and, more telling, people keep joining amateur choirs. And more people play chess today than before the machines became unbeatable in the game. Being surpassed emptied the game of careerism, not of meaning.

You are right to press questions on how to finance the transition to AI, tame the upheaval and restrain AI-powered authoritarians. But on the question of what humans will do when nothing needs doing, the research is being conducted weekly, in choirs, chess clubs and allotments.

DAVID WOODARD
Conductor
Tampere, Finland

Mr Musk's Martian aspirations aren't all crazy. His resources could fund a fleet of Starship rockets, each carrying robots along with solar-energy collectors and other equipment. So, within his lifetime, Mars could be populated with thousands of robots, impervious to heat or cold, doing construction, mining or exploration.

Few humans would aspire to end their days in the hostile Martian environment. But Mr Musk does. He has said he would like to "die on Mars, just not on impact". He could ensure unique privileges. His regiments of robots could be tasked with creating a domed mansion to accommodate him, receive him royally on his arrival, and service his needs in his final years. After death his body could be preserved in a mausoleum that would outlast any artefact on Earth, a uniquely durable memorial to human aspirations and follies that should satisfy any megalomaniacal aspirations.

LORD MARTIN REES
Former Astronomer Royal
Trinity College
University of Cambridge

Please could Mr Musk explain what "an age of amazing abundance" means in real, practical terms. Does he envisage endless fields of wheat and rice and fruit-laden orchards, or simply freely available techno bits and pieces directing our every move? A Musk-style utopian future is even less alluring than Aldous Huxley's "Island" or William Morris's "News from Nowhere".

SHEILA COUTTS
Denmead, Hampshire

Mr Musk's forecasts may or may not prove correct, but I note that he cited Iain M. Banks's novels for a glimpse into what things might be like. He also mentioned the importance of AI models having "values" (though he didn't say what those values would be).

Ian McEwan's novel, "Machines Like Me", about a humanoid robot called Adam, explores the tensions in values between humans and machines. The theme of the book is evident also in your article about China wanting to end AI romances ("No more bots", July 18th), as Adam (robot), Charlie (human) and Miranda (also human) form a love triangle.

NAOMI STANFORD
London

More letters in response to our interview with Elon Musk can be read at economist.com/letters/musk

Household income by sex

It is true that the share of American households where female income exceeds male income remains rather low ("For richer or poorer", July 25th). But your interpretation in terms of social norms can hardly be considered as final. For one thing, the 50% threshold, whereby the distribution of wives' share of household income drops sharply at the point where they begin to out earn their husbands, seems to be specific to data in which incomes are self-reported.

In 2020 Anja Roth and Michaela Slotwinski used a Swiss data set combining survey and administrative information for the same individual and their partner. They found that individuals misreport incomes in surveys, that this misreporting is consistent with the male breadwinner norm and that it essentially explains the observed discontinuity in reported earnings. In a recent paper that I co-authored using Dutch tax data, we similarly failed to find any evidence of the 50% threshold. It is probable that gender norms can motivate spouses to marginally misreport their actual incomes, but the economic consequences of a reporting bias are quite different from those of actual economic decisions.

More important, Claudia Goldin has repeatedly shown that gender differences in wages and incomes often reflect subtle differences in occupational choices. For instance, women are more likely to opt for the flexible job that allows for child-care pick-ups, sick days and household management, whereas men are more likely to go for the "greedy" jobs. Exclusively interpreting this tendency as the outcome of deeply entrenched gender norms is too simplistic, if only because such specialisation may, in some circumstances, be efficient for the household under consideration, particularly in the presence of children.

What is needed is a deeper understanding of the technology of human-capital acquisition by young children. For example, are a mother's and a father's times perfect substitutes, imperfect substitutes, or complements? This is a very active area of current research, involving economists and developmental psychologists.

In basically all developed countries, and in a significant number of middle- or even low-income ones, women are now more educated than men. This crucially important change remains largely underdiscussed, despite its potentially major consequences. In the end, the scarcity of female breadwinners may progressively wane, but much is still to be learned about this process.

PIERRE-ANDRÉ CHIAPPORI
Professor of economics
Columbia University
New York

Africa's expanding cities

It is indeed better to plan for an urban future in Africa than react after the fact ("Sprawl for all", July 4th). Planning infrastructure pays for itself. Your piece shows that basic street plans raised land values in Dar es Salaam's suburbs, but that the gains flowed to grey-market speculators and the well-connected.

Half of urban Africa's footprint in 2050 is not yet built, so the value its future roads and pipes will create has not yet been pocketed. African cities now collect around $8 a head in property tax, against $220 worldwide. Capture just a part of that gain and the urbanisation that connects people to productive jobs can start to finance itself.

With the world's largest surge in working-age people ahead, few fiscal reforms would do more for Africa's growth.

MARK HENSTRIDGE
Chief executive officer
Oxford Policy Management
Oxford

A forgotten heroine

Rosa Parks is rightly celebrated for refusing to give up her seat to a white person on a bus in Montgomery, Alabama, thus sparking the civil-rights movement (America at 250). That was on December 1st 1955. Several black people had been arrested before Parks during 1955 for doing the same thing, notably 15-year-old Claudette Colvin, who was arrested on March 2nd.

In 1956, Colvin was one of the four plaintiffs in *Browder v Gayle*, a federal lawsuit that ended segregation not only on Montgomery's buses, but also on public transport throughout America. After that she was mostly forgotten. Her courageous act in part inspired Montgomery's black community to protest against segregation laws, though it was the arrest of Parks that sparked a boycott of the city's transport system that lasted over a year.

Strikingly, part of the reason for Colvin's disappearance from the history of the civil-rights movement lay with the black community at the time. Black residents considered the young Colvin a troublemaker and local activists found Parks to be a more suitable person to rally round. By Colvin's own account she thought she was too dark-skinned and too poor to win the crucial support of Montgomery's black middle class. She also became pregnant out of wedlock during the year, which didn't help. Colvin died in January this year.

MAGALY RODRÍGUEZ GARCÍA
Associate professor
KU Leuven
Leuven, Belgium

Down the old rub-a-dub

I read your great obituary of Humphrey Smith, the owner of the "proudly independent Samuel Smith Old Brewery" in Tadcaster, North Yorkshire (July 18th). His strictly enforced restrictions on the use of mobile technology at his pubs ("no mobile phones except outside, no laptops or tablets") and a music-free environment ("no Muzak either, just the buzz of conversation") created uniquely sociable surroundings.

Sadly, in recent years the rules in London have been relaxed and phones and even laptops are now common in Samuel Smith's pubs, even in Ye Olde Cheshire Cheese. Often it is only the sound of young city types chatting away on telecoms that interrupts the doom scrolling. Mr Smith will be turning in his Yorkshire grave.

CHRIS DRAKE
Leicester

Vox populi

When Sir Francis Galton famously asked people to guess the weight of an ox at a fair in Plymouth in 1906, he did not offer the participants the option of giving him money in order to enter 99 additional guesses and skew the average. But this is in effect how current prediction markets work, and is also why they don't work ("Fixing the truth machine", July 25th).

BOB FISHER
Houston

Blessed are the false positives

I can confirm that software designed to detect AI-generated text are indeed "black-box algorithms that can give false positives" ("Paper trails", July 30th). I ran some texts through an AI detector.

Samuel Beckett's "Krapp's Last Tape" and "Happy Days" were judged likely to be 86% and 84% AI-generated. The Sermon on the Mount was thought to be 100% AI-generated. The programme judged a speech by Donald Trump to be 100% human-generated.

BRENDAN LYONS
Dublin

→ *Letters should be addressed to the Editor at: The Economist, The Adelphi Building, 1-11 John Adam Street, London WC2N; Email: letters@economist.com. More letters available at:* ***economist.com/letters***

BY INVITATION

Michael Selig

The new era of finance needs innovation more than consensus

THE GLOBAL derivatives market has entered a new era, and the United States is leading it. For decades, derivatives—financial contracts such as futures, options and swaps, whose value is based on the price or performance of an underlying asset—have served as a tool for businesses, farmers, investors and financial institutions to manage risk and allocate capital efficiently. What was once a niche financial tool now underpins a market with over $1.2 quadrillion (million billion) in notional value. Nearly half of that market falls under the jurisdiction of the Commodity Futures Trading Commission (CFTC), which I have led since December.

American leadership in derivatives was built over generations through competitive markets, strong institutions, sound regulation and a willingness to embrace innovation. In many market segments, gone are the days of traders shouting in pits in New York and Chicago, or even the screen-based trading of the 2000s. Derivatives markets have evolved into increasingly autonomous ecosystems driven by automated trading, artificial intelligence, algorithmic execution and real-time decision-making, reacting to information thousands of times faster than any human could.

For many years, international financial regulation has operated under an assumption that regulatory priorities would emerge through broad consensus among global institutions and regulators from different countries. Although international co-operation remains important, America is not in the business of importing regulatory trends designed by agencies that are considering yesterday's markets built around limited trading hours, single exchanges and screen-based trading.

Instead, America is once again a hub of financial innovation. During President Donald Trump's first term, the launch and expansion of CFTC-regulated bitcoin futures helped bring crypto assets into mainstream finance by providing institutional investors with transparent, regulated exposure to such assets. That foundation transformed bitcoin from a fringe asset into one increasingly integrated within the broader financial system: bitcoin exchange-traded products now hold over 1.2m bitcoins, compared with essentially none in 2016.

During Mr Trump's second term the CFTC has approved the first "true" bitcoin perpetual contract as a futures contract. A perpetual, or "perp", is a derivative contract with no fixed expiry date, instead relying on a periodic funding rate mechanism—a payment between traders—designed to maintain relative price parity with the underlying asset's spot price. Now the CFTC is helping extend the foundations laid in crypto markets to the broader financial system as capital markets enter the digital age.

Congress recently passed legislation creating the first comprehensive federal framework for dollar-backed stablecoins usable for payments, and laying the foundation for broader integration of crypto assets into the financial system. The CFTC is exploring how regulated stablecoins can be used as collateral, modernising market infrastructure while maintaining the safety and integrity that have made American derivatives markets world-leading.

Our innovation extends well beyond crypto assets. This year we launched America's first major exchange offering round-the-clock trading for gold futures. The CFTC is also engaging with market participants in the potential development of perpetual futures for non-crypto assets. At the same time, prediction markets, which exclusively fall under the Commission's jurisdiction, have shown their value as a powerful tool for price discovery.

Whereas America is embracing responsible innovation, many of our international counterparts are moving in the opposite direction. Recently, nine European financial regulators argued that the event contracts traded on prediction markets should be treated as gambling rather than financial instruments. That view misunderstands how these contracts are structured and underappreciates the fact that they are traded on marketplaces and not wagers placed with a "house". It also ignores the role these markets play in aggregating information, improving forecasting and enhancing price discovery. Prediction markets often outperform traditional polls and experts—they alone correctly forecast Mr Trump's electoral victory against Kamala Harris in 2024. Research from the Federal Reserve shows that prediction markets perform as well as or better than traditional estimates for economic indicators like the Fed Funds rate and consumer-price index.

To remain effective, global regulatory frameworks must evolve as quickly as the markets they oversee. History has shown that American leadership has been strongest when we have embraced innovation early, from the railroads and aviation to the internet and electronic trading, shaping global standards rather than waiting for others to do so. That philosophy extends to our international regulatory relationships.

Cross-border co-operation remains valuable, but access to the world's deepest and most trusted derivatives markets is a privilege. International agreements, Foreign Board of Trade registrations and supervisory arrangements should be regularly modernised to reflect evolving market structures and technology advances, while furthering the interests of American markets and protecting market participants.

Regulators around the world have long looked to the United States for leadership in policing derivatives. That should continue, with America setting sound policy so innovation can flourish. The future of financial markets will belong to those willing to push boundaries while preserving market integrity. America has shown that these goals are not in conflict. Others are free to chart their own course. We intend to remain the global gold standard. ■

Michael Selig is chair of the Commodity Futures Trading Commission.

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I HEAR THE WIND WHISTLING OVER THE ICE SHEET
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The humanoid condition

SHENZHEN, SUZHOU AND ZHENGZHOU

China's drive to dominate AI poses a big risk to the world's largest workforce

LI DAZHI PACED back and forth on a set resembling a chief executive's office as he rehearsed lines in Zhengzhou, a city in central China that has become a hub for microdramas. The serialised minute-long shows have taken over phone screens across the country; one in two people watch them. In 2025 microdramas grew into a 100bn yuan ($15bn) business, having created some 700,000 jobs and perhaps 1.3m indirect ones—a rare bright spot of dynamism in China's sputtering economy.

The booming industry had given Mr Li, a 32-year-old former traffic cop, a chance to try something new. He had been busy studying eight to 15 fantastical scripts each month. Then in February, ByteDance, a tech giant, launched Seedance 2.0, an artificial-intelligence model that can make impressively realistic videos. It quickly upended the business. Series now take days to produce instead of weeks, and are up to 90% cheaper (the bill is mostly tokens, instead of humans). Mr Li's daily salary fell by half and gigs dried up. Many of his colleagues switched to selling insurance, setting up vendor stalls, delivering takeaway food or picking up passengers. "Advanced technology can improve people's quality of life," he says. "But for our industry, right now it's doing more harm than good."

China has made an all-out push in AI, under the conviction that, in its competition with America and the rest of the world, dominance of the technology is an almost existential necessity. The Communist Party also sees a clear long-term need for AI to mitigate eventual labour shortages in a fast-ageing society. To meet that future China is aggressively pursuing AI-integration, especially in the form of "embodied AI": bringing AI models into the physical world through robots and cars. China's leaders envision an era to come of "human-machine collaboration".

But the party is increasingly concerned about how AI will displace workers. Advances in AI threaten both office jobs and blue-collar ones that have been the fallback for millions who have been laid off or paid less in recent years—in a system which lacks a strong safety-net. And, as demonstrated by the stunningly rapid disruption of microdramas, AI has the power to erase jobs in a keystroke. "This transformation involves both job creation and job destruction, yet the two effects are asymmetrical, with job displacement often preceding and surpassing job creation," Cai Fang, a prominent economist at a top state think-tank, writes in a new book on the labour impact of AI. The government's task is made harder by a bleak macroeconomic picture, potentially widening the gulf between China's have-bots and have-nots.

Some Chinese workers are already labouring alongside the technology that will replace them. Consider Jia Cunqi. For decades he clutched the wheel as he drove coal and bulk cargo across China, his back achy and his eyes sore after long stretches on the road. Now the 44-year-old has to

▸▸

move only when merging onto highways or driving short stretches on urban roads. That is because his lorry is equipped with advanced driver-assistance technology that can nearly drive by itself. China's rules still require a human in the driver's seat with his hands touching the wheel.

On a recent Monday morning, he picked up your correspondent at a rest stop in Suzhou before his last leg to Shanghai. For most of his career, he sat beside another human driver (to take turns at the wheel). Now he listens to martial-arts novels and video-calls his nine-year-old who marvels at the self-driving lorry. His job is more comfortable, if lonelier. If the lorry masters getting on highways, then it is all set, he says. But humans will still be needed, he argues, rattling off common problems: flat tyres, leaky air pipes, sudden engine-death, navigating around road accidents. By the time lorries go driverless, he thinks he will be retired (drivers often retire by 50 or 55 in China, where they tend to go longer distances with less rest).

Mr Jia is one of 38m lorry drivers who transport more than 70% of the country's freight. They are ageing and few young people want to replace them. Julian Ma, founder of Inceptio Technology, pitches his driver-assistance tech—found in most of China's autonomous lorries—as the solution for preventing a labour shortage from derailing the logistics sector, while reducing accidents and saving fuel. Some American states already permit autonomous lorries to run without human drivers, but fewer clock miles there. It is in China where the rubber hits the road. Inceptio has installed 7,000 systems and expects more than 10,000 by this year's end.

One big logistics firm says 1,000 of its 8,000 lorries are equipped with Inceptio's technology and all its future lorry purchases would be. The tech allows for 30% fewer drivers and saves 3-4% in transport costs, an executive tells *The Economist.* That is even before regulators allow lorries to operate without humans.

In July JD.com, one of China's biggest e-commerce groups, launched a 31km-long fully autonomous lorry delivery-route on the outskirts of Beijing. The pilot permits the lorry to drive itself without human hands on the wheel, so long as a safety driver sits on board. It is the latest move by Liu Qiangdong, JD's chairman, to automate his vast delivery empire. In October he vowed to buy 3m robots, 1m unmanned vehicles and 100,000 drones over the next five years. "Sooner or later, there simply won't be a need for delivery couriers," he said at an event in June. "But we don't want to see our 700,000 brothers go hungry."

American bosses are wont to predict an AI jobs apocalypse, but their Chinese counterparts usually avoid the subject for fear of angering the government. Mr Liu took pains to note that he intends to keep his "brothers" employed by training them in robot maintenance (he has partnerships with 124 schools). "We'll turn blue-collar workers into white-collar ones, letting them sit in an office instead of braving the wind and rain." But even the retail juggernaut will not need that many technicians.

It is easy to imagine the jobs AI destroys, but harder to imagine the ones it creates. Shen Jianguang, JD's chief economist, points to China's $2trn e-commerce industry as an example of how technological advances can give rise to new sectors and previously unimaginable roles.

JD's workforce, 180,000-strong when he joined eight years ago, has quintupled to 930,000, Mr Shen says. That growth has come while more of their 3,600 warehouses became highly automated and while their operations increasingly integrated AI, from AI livestreamers which hawk products (replacing humans who did the same) to last-mile delivery bots. As JD ventures further into services, which already include car repair and home cleaning, couriers will be able to train for such work as elderly and medical care, Mr Shen says. His optimistic vision dovetails with the government's goal of improving workers' skills and expanding services, crucial for boosting both employment and domestic demand.

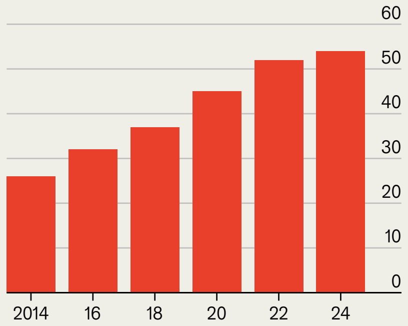
Building a robot army

With a rapidly ageing and shrinking workforce, China is betting on AI adoption and robots to maintain industrial strength. But getting the timing right will be hard. Robots are an obvious long-term solution. By 2050 China's working-age population will have shrunk by 25%. By 2100, its population of 1.4bn will have fallen by more than half, the UN reckons. In the short run, though, rolling out robots may cause a lot of pain.

In Shenzhen, a southern metropolis, both techno-optimism and resignation are palpable. Makers and suppliers of humanoid robots there have ambitions to become a "Robot Valley". Technicians test robotic lawnmowers. Human cleaners catch the spots missed by autonomous floor-sweepers. A worker surnamed Lei, sitting atop a sweeper, says his robo-colleagues may be thwarted now by leaves and stones, but inevitably they will replace humans. Just look, he says, at the robotaxis already operating in Shenzhen and other cities across China. But he, like many Chinese blue-collar workers, is more pragmatic than fearful. "With technology, you can't say things will stay the same for ever," says Lin Yinghuo, a 45-year-old courier who is used to seeing unmanned delivery vehicles and drones around town. "Replacement is normal."

Metal workers

China, % of new global robotics installations



Source: International Federation of Robotics

Are robots ready to replace humans? In 2024 China installed almost 300,000 industrial robots—more than half the world's total that year (see chart)—and increased its stock to 2m, double what it was in 2021. Traditional robots have already replaced factory workers, but they struggle with more complex tasks (for instance, carving out bad bits from potatoes on a conveyor belt when the tubers vary in shape). Humanoid robots—or, simply, humanoids—can learn to feel different textures, sizes and pressures and determine the right amount of force to hold something without breaking or dropping it.

For all the hype around humanoids, few yet work on actual factory floors. Leaders want to achieve scale soon. In June they asked local governments and state-owned enterprises for their plans to make 10,000 humanoids do real work by the year's end. Morgan Stanley, a bank, reckons that China's humanoid sales will reach 50,000 units and $2bn this year, and will increase to 446,000 and $15bn in 2030.

Humanoids are becoming more promising employees. Jiao Jichao of UBTech, a maker of humanoids, predicts a market breakthrough next year, with more industrial customers moving from small orders to hundreds each. They want a return on their investment within two years, which he says is doable with humanoids priced under 300,000 yuan ($44,000). As production scales, robots are going to become only more cost-effective compared with humans, he says. Jeremy Lee of PaXini, a humanoid-maker that counts car-industry giants like BYD and SAIC as investors and customers, says bosses see humanoids as more efficient and less likely to slack off.

Humans, though, will still be needed to train humanoids. When you order a robot cleaner in China, it arrives with two humans: a robot trainer and a competent cleaner. At PaXini's sprawling factory in Tianjin, 500 sensor-wearing humans perform tasks needed in car plants, hospitals and supermarkets—creating training data for humanoids. Though fewer workers are needed to monitor delivery drones and robotaxis as they progress, Mr Lee says there is so little real-world data that trainers will be needed for the next decade or two.

Even as firms say humanoids will liberate humans from dangerous and repetitive work, the human jobs they are creating are not fun. Dao Xinyue, a 25-year-old university graduate in Shenzhen, has been applying for jobs since November. A former barista, she applied for one job filling coffee machines for gimmicky robo-baristas. During an interview for a robot-training job, she found folding clothes for 30 minutes so boring that she could not imagine doing it day after day. She relies on support from her parents, bitter-melon farmers, to pay rent while she keeps looking for work. At streetlights, she watches robotaxis turn corners, hoping they will make a mistake and prove that they cannot replace another driver. But they drive well.

As in other countries, young workers are expected to be among the hardest-hit by AI. In China their prospects are especially grim. Five years into a property crisis, the economy is still grappling with lower wage growth and stubbornly high youth unemployment. In this year's second quarter, China missed its target for economic growth. In July, for the first time in decades, it did not set an urban job-creation target in its five-year plan. "There is significant pressure on employment and household income growth and shortcomings in livelihood support," the human-resources ministry said, citing AI as one challenge.

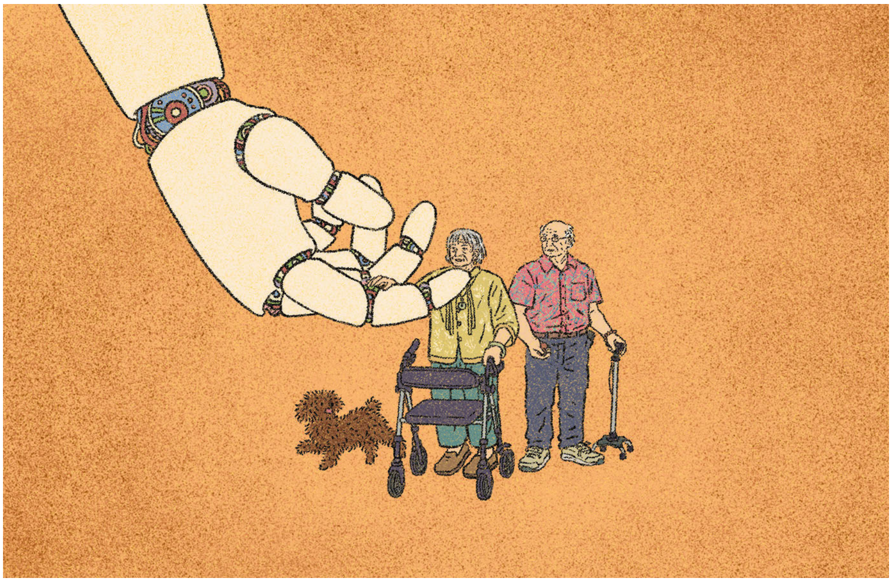
For years the Communist Party planned for an economy oriented towards tech advancement and adoption. As its companies push to the frontier, it now worries about AI disrupting social stability. One major challenge is calibrating the degree of intervention: the government is "very cautious" because it wants to assuage anxious workers but not stifle innovation, says one policy adviser in Beijing.

The party can look to its huge public sector, where job security is sacrosanct, for ballast. But private firms too face pressure to protect workers. "US companies are very directly rewarded in their stock price for laying a bunch of people off and saying that they did it because of AI," but Chinese firms have the opposite incentives, says Matt Sheehan of the Carnegie Endowment, a think-tank. Dan Wang of Eurasia Group, a consultancy, recently met local officials who have pressed firms to add new jobs to offset lay-offs caused by automation. *Workers' Daily,* the mouthpiece of China's official trade union, criticised practices such as digitally cloning staff.

Chinese judges, who operate under party leadership, have so far sided with workers in AI-related firings. In Hangzhou, a leading industry hub for AI, a judge deemed it illegal for a fintech firm to fire a tech worker surnamed Zhou on the basis of AI being able to perform his duties. The 35-year-old was sacked after refusing to accept a demotion and pay cut. His case, and others across China, have been held up by the government as warnings to not use AI as an excuse for lay-offs. Chinese firms must first try to retrain and reassign workers before firing them for incompetence.

The government also wants to educate and train people to realise its AI ambitions. While young people struggle to find jobs, the country anticipates needing many millions more workers in skilled manufacturing and AI research (even with China already having more AI researchers than America, Britain and the EU combined). Primary and secondary schools are incorporating AI lessons into their curricula. Universities are funnelling students into thousands of new degree programmes in such fields as "embodied intelligence" and "agricultural robotics" after cutting thousands of "obsolete" degrees, mostly in the arts and humanities. The state is also subsidising retraining as well as promoting vocational education in areas like the "low-altitude economy" (including, say, flying taxis).

Many of those who fall through the cracks will find a threadbare safety-net, including meagre social security and minimal health insurance. Zheng Gongcheng, head of the China Association of Social Security, warned the legislature last year that the more that AI and robots replace workers, the fewer wage-earners there will be left to pay into the welfare system to support those out of work. He suggested a new tax on robot-enabled productivity gains. Luo Zhiheng of Yuekai Securities, who has briefed Chinese leaders, floated taxing the "excess profits" of AI firms.



Help wanted

Some economists and former officials want new subsidies like AI-unemployment insurance and cash handouts. "The more disruptive a technological revolution or industrial transformation, the greater the intensity of creative destruction and the more inadequate market mechanisms are in protecting workers' rights," Mr Cai, who previously held a vice-minister level role, wrote in a June front-page editorial in the central party school's paper.

The constituency that might agitate for more goodies from the state is getting larger. The number of "flexible workers" that make up China's vast gig economy—its food-delivery and ride-share drivers, live-streamers, factory day labourers and the like—will swell to 320m this year, up from 280m in 2025 and double its size in 2019, estimates the China New Employment Forms Research Center, a think-tank. Firms and policymakers have taken modest steps to include more of them in the social-security system, lest their precarity transform into unrest. AI could increase the pressure to do more.

Still, no ambitious scheme seems likely anytime soon. The government guards its pennies when contemplating subsidies, and Xi Jinping, China's president, has professed an aversion to "welfarism". As more robotaxis take to the streets, ride-share drivers will have to scrape by. So will Mr Li, the actor, while his bosses flourish.

In an office tower in Zhengzhou, Zhang Lei runs Mengchang Media, a studio. "AI-crafted microdramas—creativity beyond imagination," reads one slogan. Mr Zhang used to have ten crews shooting every day.

Now, row after row of humans called *choukashi*—literally "card-drawers", an AI-era term that calls to mind randomly drawing cards and hoping for a good one—write prompts specifying, for instance, a close-up of a character's furrowed brows, "his expression full of gratitude and expectation". Software spits out seconds-long scenes that a *choukashi* tweaks and sequences. There is not a cameraman, lighting crew or actor in sight. ■

United States

Artificial intelligence and jobs

Retraining America

Can America teach its workers new skills before AI leaves them behind?

KIMBERLY BRADY was running out of options. The 53-year-old Californian had a degree in psychology but was stuck in a low-paid job at Costco selling electronics and jewellery. After some 620 unsuccessful applications for customer-service and sales roles—fields increasingly being reshaped by AI—she decided to retrain for Costco's optical department. With no formal programme available, she spent six months teaching herself opticianry from textbooks and YouTube, passed two national board exams and paid thousands of dollars for two licences. But it was not enough. Without hands-on experience, "they still wouldn't hire me," she says.

Ms Brady's experience points to a broader problem. Switching careers in America is hard; AI may soon make it more common. Around 10m jobs could be displaced over the next decade, according to Goldman Sachs, a bank. Entry-level white-collar jobs and routine office work are especially exposed, putting both new and current workers at risk. Widespread job losses have yet to materialise, but the fear is already shaping American politics: nearly one in five workers expects AI to eliminate their job within five years.

Earlier technologies from electricity to the computer displaced workers but also created new kinds of work. Now some technologists, including Elon Musk, imagine a future in which universal high income cushions people as paid work recedes. Few politicians accept that solution, but devising a different fix is harder. A serious response would help young people enter the workforce, existing workers adapt as jobs change, and displaced workers move into new occupations. Can America build such a system before the disruption arrives?

Its recent record is not encouraging. Between 2000 and 2011 America shed nearly 6m factory jobs—some 1m of them owing to Chinese import competition. The main federal response, Trade Adjustment Assistance (TAA), paid for retraining and extended unemployment benefits, but only for workers who could prove that trade had cost them their jobs. Those who received training worked roughly three months more than comparable workers who did not and, over the following decade, earned about $50,000 more.

But the programme's scope was limited. In the early 2000s roughly 160,000 workers a year were covered by TAA certifications, while manufacturing was losing around 500,000 jobs annually. Of those covered, only about 40,000 entered training each year, reflecting cumbersome applications and long wait times. The result was local economic devastation that helped fuel America's populist turn.

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— Lexington is away

The AI shock will be different, affecting white-collar jobs scattered across the country. Losses may come through less hiring and rounds of layoffs rather than factory closures. Still, the burden could fall heavily on particular groups. Young workers may find entry-level opportunities disappearing, while women without degrees—overrepresented in administrative and back-office roles—face high risks.

At present, the country's system of educating and training workers assumes that they train once, near the start of their careers, and unemployment is a brief interruption before a return to similar work. Around four in ten Americans graduating from high school enroll in a four-year university. Community colleges provide most short-term training, but receive far less funding—they get roughly $25bn in public funding for workforce programmes and serve around 8m people a year.

Federal support for displaced workers is smaller still, especially since TAA closed to new workers in 2022. In 2023 the main federal training scheme for those who lose their jobs spent $170m on about 39,000 people. A modest voucher goes toward an approved course. "Our whole system is predicated on funding based on attendance, not outcomes," says Gina Raimondo, Joe Biden's commerce secretary and a former governor of Rhode Island. The result is fragmented and underfunded.

What would a better model look like? Start with young workers. If AI erodes entry-level white-collar jobs, America will need more routes into work that do not run through a four-year degree. One solution is sectoral programmes, which bring employers and training providers together to design courses around actual vacancies. Four randomised trials in health care, IT support and manufacturing found lasting earnings gains of 11-40%.

Apprenticeships offer another route, combining paid work with structured training. These have become more popular, but only around 800,000 Americans are registered apprentices, barely half the number in Germany, with a quarter of America's population. Unlike in Germany, America's apprenticeships remain concentrated in construction and skilled trades.

Other initiatives are getting started. RAISE US, a non-profit co-founded by Ms Raimondo and Eric Holcomb, a former Republican governor of Indiana, is working with states, training providers and employers—its donors include Anthropic and OpenAI, two giant AI firms, as well as General Motors and Bank of America. So far it has announced pilots in four states. In Maryland it has built on a state scheme that pays young workers to spend a year with non-profits, adding coaching, training and pathways into long-term jobs in health care and education.

Incumbent workers need a different type of assistance, as AI changes the jobs they already hold. It is common for large white-collar employers to help staff learn how to use AI. But some workers will need not a new version of their current role but an entirely new job.

Salesforce, a software company, offers a glimpse of what that might involve. It maps employees' skills to possible internal roles and recommends training; reimbursement can help cover the cost of formal qualifications. It is fitting that Salesforce, itself being reshaped by AI, is testing ways to help its staff evolve. But such internal platforms remain rare.

The main problem is that, for many in exposed jobs, no one yet knows what they should be trained for. Ideally roles should build on existing skills and preserve some professional identity. "There is a cost to people's egos," says Lee Lilley, North Carolina's commerce secretary. "It is not realistic to take someone with a 20-year career in a white-collar setting and ask, 'Would you like to become a welder?'"

That uncertainty is one reason training systems need to be nimbler, with employers closely involved in adapting courses to changing demand. But that involvement will not come automatically. At Costco, Ms Brady eventually moved into its optical department after being allowed to cross-train. Yet the opportunity arose through an ad-hoc accommodation, not a model for retraining workers at scale.

As technological change forces workers to switch jobs more often, many may need to retrain several times. Yet those who lose their jobs receive little help doing so. Donald Trump's One Big Beautiful Bill Act extended federal Pell grants to approved career programmes lasting between eight and 15 weeks. But the Congressional Budget Office expects the change to reach only 100,000 additional recipients a year by 2034, with grants averaging just $2,200.

In the 1940s business leaders fearing mass unemployment after the second world war formed the Committee for Economic Development to plan the transition to peace. Ms Raimondo wants firms to support a modern equivalent. "If we don't get this right, we won't lead the world in AI," she says. "There will be regulatory backlash, which is bad for the companies."

Connecticut's governor, Ned Lamont, would welcome more collaboration with tech firms. "Frankly, I need help from Anthropic and the AI companies to stimulate our imagination," he says. Anthropic and the OpenAI Foundation have committed $200m and $250m, respectively, to research and programmes such as RAISE US to help workers and economies navigate AI disruption. By way of comparison, OpenAI plans to spend 3,000 times that sum on computing power through 2030. ■

Taxes

Call of duty

Republican-led states seek to phase out income taxes

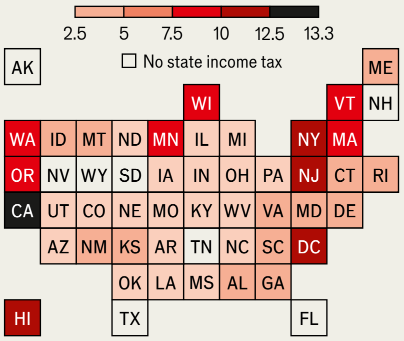
WHEN HE WAS on the pro-wrestling circuit, Glenn Jacobs—known as "Kane" in the ring—worked in nearly every state. The result was a tax return "a foot tall". Now the Republican mayor of Knox County, Tennessee, Mr Jacobs is pleased that his state eliminated income tax in 2021 and is serving as a model for other states. On August 4th Missouri voted on a constitutional amendment to phase out income tax. It failed, but its presence on the ballot points to a broader trend.

State tax systems are diverging. Much attention has been paid to Democrats' efforts to raise taxes on the rich. Washington state, for example, introduced an income tax on millionaires this year, and in November Californians will vote on a wealth tax. But Republican-led states are moving in the other direction. Over the past five years 26 states—most led by Republicans—have reduced their individual income-tax rates. Missouri's top marginal rate has fallen by more than 20% since 2017.

This widening disparity is relatively new. Democrats and Republicans have always differed on taxes, but historically states tried to stay within a range that raised revenue without dampening economic activity. "It used to be possible to speak of a broad middle", with rates hovering around 6%, says Jared Walczak of the Tax Foundation, a think-tank. "Now you either have low rates, below 4%, or increas-

The great divide

Top marginal state income-tax rate*, Jan 2026, %



*Local income taxes excluded. WA's rate applies only to certain capital-gains income. Some payroll or investment-income surtaxes in CA, MA, WA, MN and MD excluded.
Source: Tax Foundation

ingly high-rate states, entering into double digits," Mr Walczak explains.

Income taxes attract particular attention. Democrats prefer graduated income taxes to flat consumption taxes. The latter are regressive, imposing a disproportionate burden on low-income people, who spend a greater share of what they earn.

Republicans take a different view. Bishop Davidson, the Missouri state representative who sponsored the no-income-tax amendment, argues they are "wildly invasive of people's privacy". In January Donald Trump's Council of Economic Advisers published a report encouraging states to scrap income taxes and replace them with a broader, higher sales tax. It argued that taxing consumption rather than production is more economically efficient. But a tax model that works in one state may not in another. Florida has no income tax, but can collect sales tax from tourists. Texas also lacks an income tax, but fills coffers with fees from oil and gas.

In Missouri income-tax abolitionists consider Tennessee a more realistic model. Mr Davidson has also studied South Carolina, where lawmakers voted in March to draw down income taxes, and North Carolina, a swing state which will vote in November on a ballot measure to lower and cap its flat rate.

Detractors dismiss such comparisons. It is "apples and oranges", says Ashley Aune, the top Democrat in Missouri's House, not least because Tennessee had been only minimally reliant on income tax for decades before abolishing it. Missouri, in contrast, depended on income tax for almost two-thirds of its revenue last year. Scott Charton, who advocated against abolishing the income tax, points out that Missourians rejected new taxes on services in 2016. The problem with eliminating one type of tax is that you probably have to raise another. In Missouri, that argument seemed to win out. ■

The Senate

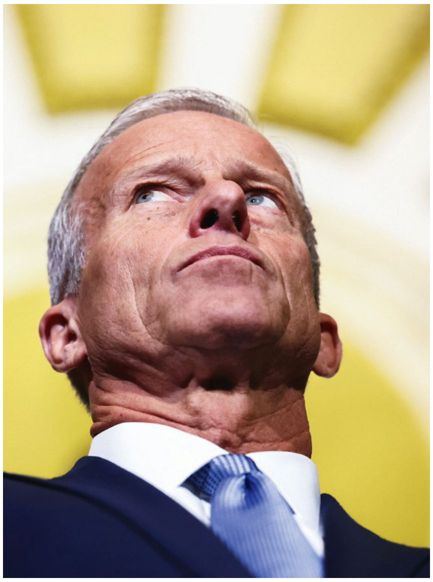
All the president's irritants

WASHINGTON, DC

Republican senators irk Donald Trump

WAS IT A CONCESSION or a con? On August 2nd Todd Blanche, Donald Trump's pick for attorney-general, produced written assurance that the Department of Justice was scrapping the president's $1.8bn "anti-weaponisation" fund, a condition that Republican senators John Cornyn of Texas and Thom Tillis of North Carolina had set for backing him. The Senate's judiciary committee duly advanced Mr Blanche's nomination two days later. Democrats criticised the move as hollow, given that Mr Trump can still revive the slush fund in future. But to some Republicans, it was evidence that the Senate can still check the president's worst instincts.

Congress remains largely pliant to Mr Trump. But a small band of Republican senators are increasingly defiant. Some, such as Mr Tillis and Mr Cornyn, are on their way out, so have little to lose and are picking more fights. Susan Collins of Maine, another senator resisting Mr Trump, faces a Democratic challenger in November. Presiding over this is John Thune (pictured), the Senate majority leader who has the blessing of not facing re-election until 2028 and the curse of trying to lead the chamber with Mr Trump in the White House. When senators break for a five-week recess on August 7th, they will have produced few wins for the president. The Democrats "can't believe how lucky they got with this Senate leadership", Mr Trump vented last month on Truth Social. "Remember, stupidity always brings LOSING & DEATH!"



Mr No, for now

Mr Thune has framed his reluctance to advance Mr Trump's agenda this summer less as a matter of policy than one of procedure. He has told the president that the SAVE America Act, a voter-identification bill, lacks the 60 votes needed to overcome a filibuster. Mr Trump's fix—that Republicans do away with the filibuster—is a non-starter for the institutionalist Mr Thune. "The Republicans are not getting rid of the legislative filibuster," he said in July. "It's just a fact, and the facts don't change."

Mr Thune is also loth to use the budgetary tool known as reconciliation as a workaround. The Senate would need only a simple majority to pass parts of the SAVE Act using reconciliation, but the process is meant primarily for spending measures. That procedural reason is matched by a political one: reconciliation would force vulnerable lawmakers to make contentious votes right before the midterms. Senate Republicans "have no intention of putting skin in the game on Trump's behalf", explains a Republican operative.

In private, many senators say they appreciate Mr Thune acting as a shock absorber. Though the president has questioned his viability, he maintains the backing of much of his conference. Two Trump loyalists, Mike Lee of Utah and Rick Scott of Florida, tried and failed to buck Mr Thune by keeping the Senate in session to pass the SAVE Act.

The composition of that conference is due to change, however. "The Senate will become more Trumpy, ideologically," predicts Matthew Glassman of Georgetown University. The seats occupied by Mr Tillis and Mr Cornyn will next year be held either by Democrats or MAGA newcomers. Two other Republicans leaving the Senate, Bill Cassidy of Louisiana and Mitch McConnell of Kentucky, will almost certainly be succeeded by acolytes of Mr Trump. In Louisiana Julia Letlow was personally recruited by the president, while Kentucky's Andy Barr has vowed "to stand with President Trump 100%".

As the Senate's MAGA wing gains greater influence, Mr Thune's job will get even more difficult. Mr Lee, for example, looks set to be the top Republican on the judiciary committee next year. Trump-aligned senators may begin to press Mr Thune to push through controversial nominees or support Mr Blanche if he moves to re-establish the slush fund, as Republican strategists murmur that he will. New Republican senators may even move to abolish the filibuster. Should Democrats win control of the Senate, Mr Thune's power will be diminished. He may find some solace in having strident anti-Trumpers on the left to give him cover. ■

The midterms

Independent actors

KALISPELL, MONTANA AND SIDNEY, NEBRASKA

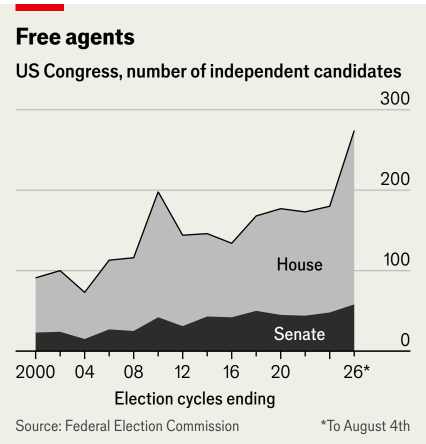
Americans are sick of Republicans and Democrats. Can independents win?

BIAS BREWING in Kalispell, Montana, may seem an oddly named place for a self-described "radical pragmatist" to hold a campaign event. Yet on a recent evening in July, Seth Bodnar chose the brewery to make his campaign pitch. "Running as an independent, you upset people on both sides," he told the crowd. Mr Bodnar (pictured) wants to be Montana's next senator. He believes Democrats ignore the state and Republicans take it for granted.

Mr Bodnar's campaign is part of a trend. Voters are dissatisfied with America's two main political parties. Net favourability for the Democrats, in particular, is near a 35-year low. That has created an opening for politicians on the far left (see next story), but it is also inspiring a new generation of independents. More congressional candidates have filed to run as independents in 2026 than in any election cycle since at least 2000. The campaigns of Mr Bodnar and Dan Osborn, a candidate in Nebraska, are this year's best test of whether independents can succeed.

Running as an independent is sufficiently difficult that, at least historically, few politicians have deemed it wise to do so. Independents lack the campaign infrastructure of a party and, in many states, must collect more signatures to earn a place on a ballot. However, aspiring politicians now face a shifting set of odds.

Last year 45% of Americans identified as independent, the highest share since at least 1988, according to Gallup. Those independents are, in turn, five percentage points more likely to lean Democratic than Republican. In Republican states, where Democratic policies are often more popular than the party itself, an independent may have a better chance of winning. It is no coincidence that two of this year's strongest independent candidates are campaigning in Montana and Nebraska, where voters have thrice voted for Donald Trump but where farmers are also pinched by tariffs and fuel costs.


Free agents

US Congress, number of independent candidates

Source: Federal Election Commission

*To August 4th

In Montana, Mr Bodnar has an institutionalist's pedigree: he graduated from West Point, was twice deployed to Iraq and worked at General Electric before serving as president of the University of Montana in Missoula. "I feel like both parties left me in what I call the sensible centre," he explains over coffee in Missoula. He faces Kurt Alme, a former US attorney backed by Mr Trump and Steve Daines, the retiring senator who now holds the seat. Mr Daines waited until the last moment to announce his retirement, in effect ensuring that only his preferred candidate was prepared to run.

Mr Osborn, in contrast, is a populist firebrand. A 51-year-old veteran, mechanic and former union leader, he got his political start in 2024, when Democrats failed to field a Senate candidate. Mr Osborn ran as an independent and lost to Republican Deb Fischer, but won an impressive 47% of the vote. His opponent this time is the Republican incumbent Pete Ricketts, a wealthy former governor whose father founded TD Ameritrade, a financial firm.

Critics argue that neither Mr Bodnar nor Mr Osborn are true independents, but Democrats seeking to escape the party's noxious brand. Indeed both men rely on Act Blue, a Democratic fundraising platform, and enjoy the support of prominent Democrats. Mr Osborn, in particular, echoes the anti-billionaire sentiment of today's left. "Elon Musk can give a campaign $300m and he's got keys to the White House," he recently told a crowd in Sidney, Nebraska. "Man, that's not right."

Mr Bodnar insists that his independence is a product of his military career, which fostered non-partisanship, and claims he has identified as an independent for more than a decade. "We believe strongly that the government has no place in our doctor's office, no place in our bedrooms, no place in our gun cabinets." Mr Osborn critiques the Democrats' past standard-bearers. "I'm not afraid to say that Joe Biden failed us on the border. I'm not afraid to say Obama shouldn't have bailed the banks out," he says.

Victory for independents depends on their ability to convince enough Republican voters to give them a chance. As important, it depends on Democrats' decision to drop out or remain in the race and risk splitting the vote. The winner of Nebraska's Democratic primary has filed paperwork to withdraw, but a loser of that primary is suing to force the party to compete.

In Montana the Democratic nominee is Alani Bankhead, whose campaign is nearly broke. "When I was a senator," says Max Baucus, a former Democratic senator in the state, "I raised millions of dollars for Democrats in Montana." He is now supporting Mr Bodnar. The deadline for Ms Bankhead to withdraw is August 10th. Mr Baucus is still hoping she drops out. "For Seth to win", he says, "she has to." ■

Coca-Cola
BODNAR

A self-driving candidate

Democratic
Socialists of
America

The populist left

Flight of the comrades

CHICAGO

The Democratic Socialists of America are having the summer of their lives

FOUR YEARS ago the Democratic Socialists of America (DSA) were in a funk. *Jacobin*, a left-wing magazine, declared the group in purgatory. Joe Biden's victory over Donald Trump in 2020 had made Democrats complacent—they had gone "back to brunch", in the pejorative of the left. Then came the war in Gaza. Progressives found their animating cause in Palestine. Mr Trump's defeat of Kamala Harris strengthened their case for change: what were establishment Democrats good for if they couldn't stop his second coming?

Now the populist left is ascendant. New York has a DSA mayor and soon Washington, DC, will too. DSA-backed insurgents have trounced incumbents in several congressional primaries.

On August 4th Abdul El-Sayed beat Haley Stevens, a centrist backed by pro-Israel groups, in Michigan's Democratic primary for Senate. Dr El-Sayed is not a DSA member—he calls himself a capitalist—but he is supported by the socialist crowd. In Wisconsin, Francesca Hong, an out-and-proud socialist, looks likely to win the Democratic primary for governor on August 11th. This is fuelling speculation that a DSA-aligned candidate could nab the party's presidential nomination in 2028. It is a stunning development for a group with quirky governance, few members and many unpopular positions.

The DSA has an unusual structure: it is a discrete entity but its candidates compete on the Democratic Party ballot line, enabling it to change the party from within. Unlike the top-down model of the two big parties, where officeholders and donors hold sway, DSA members decide most things by vote. Their activism extends to union organising and agitating against data centres. This keeps the rank and file engaged. The DSA, says David Purucker, a sociologist and member, thrives during periods of Republican governance because "it's on the barricades much more naturally than the Democratic Party".

The DSA likes to say that populist economics can carry the day. It points to Zohran Mamdani, New York's mayor, who campaigned on rent control and free buses while downplaying other populist-left positions. But the DSA programme still includes voting for non-citizens and reparations for black Americans. A visitor to its recent summit in Chicago was left with the question: had a Hyatt Regency ever hosted so many people sporting keffiyehs and septum rings? And had this group missed the backlash to the Great Awokening? Most other Democrats have concluded that populist-left positions such as "defund the police" are an electoral dead-end.

In the House socialists occupy just a handful of seats in the 200-plus Democratic caucus. Most DSA primary victories have been in deeply Democratic terrain. In places where it is ascendant, like New York City, the DSA is out-organising mainstream Democrats with social-media savvy and old-fashioned door-knocking, powered by ardent volunteers. The two major parties became so reliant on consultants and donor-funded advertising that their canvassing muscle atrophied, says Nate Knauf, a DSA leader in Atlanta. "You need actual human beings to move your politics."

Membership has swelled more than twentyfold in the past decade, but still totals only around 120,000. The prime target is the downwardly mobile millennial. Michael Lange, a political analyst and DSA member, says the question to identify prospective joiners is: "Are you under 50 and do you rent?" In its most recent survey, in 2021, four-fifths of DSA members over the age of 25 had a college degree, a third had a postgraduate degree and a third were gay or queer. Ashik Siddique, a co-chair of the DSA, says it is the country's largest queer membership organisation. Members found to be cops can be expelled.

Therein lies the paradox: a group that claims to represent the working class looks and speaks nothing like it. From policing to immigration to abortion, college graduates are to the left of blue-collar workers. Take trans rights, a plank of the DSA platform. Only half of working-class people tell pollsters that it should be illegal to fire or evict a trans person, compared with 82% of left-leaning college grads.

On economics, too, working-class and older voters tend to be more sceptical of the sweeping changes promised by the young new left, says Adam Carlson, a pollster. Mr Siddique, sounding a bit like Lenin, says the DSA's task is to cultivate a working-class consciousness. The wrinkle is that working-class voters believe in merit and hard work, notes Nicholas Jacobs, a political scientist at Colby College. They tend to be less enthusiastic about expanding government services while distrusting pointy-headed types who use words like "systemic". Tellingly, in polling, only white left-leaning college grads count "tax the rich" as a top-ten priority.

Michigan and Wisconsin are battleground states with close general elections, unlike most races where progressives compete. In November Dr El-Sayed and Ms Hong, presuming she wins her primary, will test the thesis that the left can never appeal to moderates.

Some Democrats contend the party should welcome socialists within its big tent and that moderates ought to learn from their organisational prowess. Centrists fear the only lesson will be in defeat. "I actually do think it's time for Democrats to talk the S word—schism," James Carville, an ex-aide to Bill Clinton, said on his podcast recently. David Axelrod, a former adviser to Barack Obama, has called Democrats' battle in Wisconsin a "slow-rolling car headed for a cliff". ■

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The Americas

Brazil's election

Not with a bang

SÃO PAULO

Brazil's general election kicks off with foreign interference and domestic apathy

CAMPAIGNING FOR Brazil's general election in October does not formally start until August 16th, but already the race is testy. Donald Trump has slapped new, exorbitant tariffs on Brazil, his motivation seemingly more to do with politics than trade. Brazil's government denied visas to two officials from the US State Department, claiming they planned to cast doubt on the integrity of the country's electronic-voting system. On July 25th Argentina's president, Javier Milei, travelled to São Paulo and gave a speech in which he referred to Brazil's president, Luiz Inácio Lula da Silva, as a "convict" and "thief". And on August 4th the Trump administration revoked the visa of Brazil's ambassador to the United States.

For all this fuss with foreigners, the mood among Brazilians is one of disillusion. Voters appear unenthusiastic about the choices on offer. Leading the race is the 80-year-old incumbent, known as Lula, making his seventh run for the presidency. His main challenger is Flávio Bolsonaro, the eldest son of Jair Bolsonaro, a populist former president serving a 27-year sentence for attempting a coup after losing the most recent election, in 2022. A slew of other right-wing candidates poll in single digits. Whoever wins will lead a divided country. Around half of Brazilians say they would never vote for Lula, and a similar share would never vote for Flávio.

As well as their next president, Brazilians will pick governors for all 27 states, two-thirds of the Senate and every member of the lower house. The next president will have a chance to nominate four of the 11 justices who sit on Brazil's Supreme Court, a powerful institution that often intervenes in politics. If no presidential candidate wins more than half the votes on October 4th, a run-off will be held on October 25th.

→ **ALSO IN THIS SECTION**

28 Javier Milei's Odysseus act

29 Claudia Sheinbaum snaps

Since Mr Trump returned to the White House in January 2025 right-wing lookalikes have won all seven presidential elections in Latin America. Mr Trump has interfered in several of them, publicly backing his preferred right-wing candidates. This has transformed Lula's campaign. At his Workers' Party convention on August 2nd, party leader Edinho Silva made it clear what the line would be: "We must choose between a Brazil of authoritarianism...that sells itself out...and a sovereign Brazil that defends our interests."

It is easy to imagine Mr Trump trying to sway Brazil's ballot. Last year when Mr Bolsonaro—who fancied himself "the Trump of the Tropics"—was put on trial, Mr Trump's government placed sanctions on the Supreme Court justice in charge of the proceedings and cancelled visas for eight judges on the bench. Mr Bolsonaro's allies were left alone.

But foreign right-wingers seem to be the only ones Flávio can count on. At the convention in São Paulo that launched his candidacy on July 25th, Brazil's other right-leaning parties were notably absent. Instead, he was backed by Mr Milei and the insults he hurled at Lula. Israel's Binyamin

▸▸

Netanyahu, another Trump ally, offered a pre-recorded message.

Flávio's campaign took a mighty blow in May, when recordings leaked in which he can be heard asking for money from Daniel Vorcaro, the disgraced banker at the heart of Brazil's largest-ever bank fraud. Flávio wanted the money for an English-language film about his father, "Dark Horse", which is due to be released in September. The leaks caught Flávio in a lie, after he previously denied having a relationship with Mr Vorcaro. Flávio's approval ratings plummeted.

A public spat with his stepmother, Michelle, who is adored by Brazil's powerful evangelical Christians, has also hurt. After the tiff, a close ally of the Bolsonaro family told a podcaster: "Statistically speaking, women tend to vote very badly, especially single women." Among Brazil's women, Lula leads Flávio by 18 percentage points.

Centre-right parties dominate Congress. Their refusal to back Flávio may well be down to a calculation that Lula will be re-elected. His approval rating is high, between 43% and 48% in recent surveys, levels at which incumbents can expect to win.

Yet there could still be an upset. Lula's lead in voting intentions is slim. Voters' top concerns are corruption and crime, and Lula is seen as weak on both. He served 19 months in prison for corruption before his conviction was overturned on a technicality in 2021. Many voters have never forgiven him. Flávio has recovered ground in recent weeks as Lula's political allies and his son have been caught up in corruption scandals. And even though reports of violent crime are falling, voters seem to think security is deteriorating. In an Ipsos poll published in June, 47% of Brazilians cited violence as the country's main problem, up seven points from last year.

Disillusionment could help Renan Santos, a former entrepreneur and political outsider. He rose to prominence in 2016 as the organiser of protests that led to the impeachment of Dilma Rousseff, Lula's protégée. Mr Santos criticises both Flávio and Lula in slick videos posted to millions of followers on Instagram and TikTok. He may attract fed-up voters.

Mr Santos says he is liberal on economics but a social conservative. He models himself on Mr Milei, as well as Nayib Bukele, El Salvador's autocrat, who has dramatically improved security in his country by adopting hardline tactics. One of Mr Santos's slogans, "Catch, Kill", refers to what he would allow police to do to alleged criminals. He says he wants to turn the country's presidential palace into "a start-up" for policy ideas. Though he remains relatively little-known, upcoming television debates may change that. The presence of a firebrand outsider should worry Flávio's camp. And maybe even Lula's. ■

Fighting inflation

Block up your ears

MONTEVIDEO

Javier Milei is overhauling the central bank

ODYSSEUS HAD it easy. He only had to resist the lure of the sirens once. Javier Milei, Argentina's president, is trying to bind not just his government from indulging in money-printing and thus crashing onto inflationary rocks, but to lash to the mast all future governments as well.

Because it is the central bank that issues money, his efforts are focused on changing the laws governing that institution. In a televised speech on July 30th he accused past governments of "looting" the central bank and announced what he claimed were "the most important set of structural reforms in the past 91 years". He outlined a new law that would ban central-bank financing of the government, make the sole goal of the bank preserving the value of the currency, and require a two-thirds majority in both houses of Congress to remove the bank's governor (the incumbent was appointed by Mr Milei).

Inflation has long been the scourge of Argentina (see chart on next page). It has typically been caused by governments overspending and then printing money to fill the gaps. When Mr Milei took office in December 2023, inflation was running at 13% per month. He took a chainsaw to spending, and he stopped the central bank from financing the government. That has helped bring down inflation to 1.9% per month. Mr Milei rages against the possibility that a future government could rev up the printers again. Reforming the central bank is his attempt to avoid that.

Most of his planned reforms, which are expected to pass Congress, are laudable. The bank now has five complex and contradictory goals including "economic development with social equity". Simplification is wise. Governors who cannot be removed easily should find themselves empowered to reject government demands for free money. Explicitly prohibiting monetary financing at all levels of government should also help. Mr Milei also announced a liberalisation of capital and insurance markets, and a more questionable law inspired by the United States that will automatically shut down the government if it spends more than it gets in taxes for "several" consecutive months.

No accounting for Peronists

Still, there are wrinkles. Making it harder to sack bank officials is wise, but the reforms do not simultaneously improve the appointment process, which is odd. Mr Milei has also suggested that the new laws may include criminal penalties against central-bank officials who facilitate money-printing. That would be highly unusual and will hardly encourage talented economists to join the bank.

There are also outright gaps. The reforms do not limit the central bank's predilection for foreign-exchange controls.

Rejecting the honeyed voice of free money

Some remain in place today, as they have for most of the past 90 years, contributing to a cycle of temporary calm followed by crisis and inflation. In Peru, once a basket case but now a macroeconomic star, the constitution bars such restrictions. Yet the libertarian Mr Milei, fearing volatility and short-term inflation, is not yet ready to let the market freely set Argentina's most important price: that of dollars.

Nor do the reforms fix other policy-related worries. “We don't know what the monetary policy is,” says Santiago Bulat of Invecq, an Argentine consultancy. It has often been tight to keep the peso strong. This has helped control inflation, but has also hampered growth and sharply increased the number of loans which are not being repaid. But there is no clear rule on how the central bank should react to changes in inflation. To the IMF's dismay, the central bank also continues to focus on money supply rather than on interest rates as in much of the world. Mr Milei's preferences clearly influence central-bank policy, hardly an example of independence.

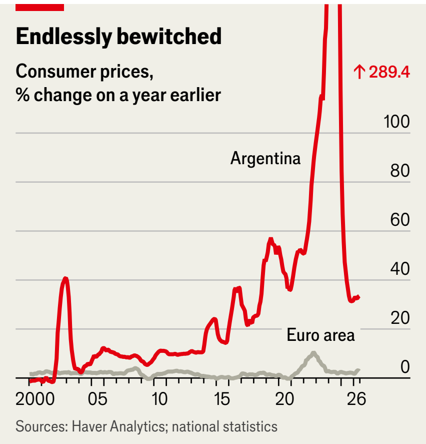
One issue with the proposed reforms is that a different Congress could reverse them relatively easily in future. Two-thirds of Congress will be required to remove the bank governor, but that requirement could itself be removed with a simple majority. Forcing would-be money-printers to change the law does raise the political costs of monetary profligacy, but it is no guarantee against it.

Political norms are what really stop politicians meddling with central banks. Mr Milei's bigger task is to shift those norms so that future politicians no longer believe profligacy is the route to electoral success. The best way to do that is to win elections and deliver results as a fiscal hawk.

Mr Milei is up for re-election in October 2027. For now he faces no strong rival. He has vastly reduced inflation, which, after an increase earlier this year, is falling again. Three ratings agencies have recently upgraded Argentina's credit rating, in part because the central bank has sensibly been buying dollars to build its reserves. The central bank also just agreed to extend its $19bn swap line with China for another five years, another boost to its reserve coverage. The IMF is mostly purring.

Lashed to the mast and sinking

But Argentines are less convinced. In July the approval rating for Mr Milei's government fell to its lowest point this term. Growth is uneven and concentrated in sectors such as oil that require relatively few workers. The economy is now expected to expand by less than 3% this year. Formal employment has been falling. Economic activity fell in May for the second consecutive month. A string of corruption scandals have not helped. Mr Milei defended his scandal-engulfed chief of staff for far too long before letting him go.



Endlessly bewitched

Consumer prices, % change on a year earlier

Sources: Haver Analytics; national statistics

Although there is time to turn things around, in Argentina a slide in the polls in an election year can set off a vicious cycle of market sell-offs, which then make poll ratings even worse. Reforming the central bank is part of a wider effort to break that dynamic. The government is trying to say “there won't be many changes even if there is a change in the government, so please don't sell every bond you have,” explains Mr Bulat. But should Mr Milei start to struggle, even a stronger central bank will not be able to save his project. ■

Mexico and the United States

The limits of appeasement

Claudia Sheinbaum is hardening against rising pressure from Donald Trump

MEXICO'S PRESIDENT, Claudia Sheinbaum, has said repeatedly that she approaches Donald Trump with *cabeza fría* (a cool head). Her strategy, shrugging off his rhetoric while quickly meeting his demands, has won her many fans, including in the White House. Mr Trump has called her “terrific” and “elegant”.

Yet she has not used the phrase since March. Tensions with the United States have been growing over security, migration and trade. “This is one of the most difficult years in the last hundred of the Mexico-US relationship,” says Rafael Fernández de Castro of the University of California, San Diego. Ms Sheinbaum's rhetoric has shifted from stoic to defiant.

The biggest clash is over security. The United States is no longer just asking Ms Sheinbaum to crack down on drug gangs; it is pursuing her allies. In April the Trump administration indicted the then governor of Sinaloa, Rubén Rocha Moya, on charges including drug-trafficking. Mr Rocha Moya, who denies wrongdoing, is close to Andrés Manuel López Obrador, the founder of Morena, Ms Sheinbaum's party. More than 50 Morena politicians have had their American visas revoked, according to Reuters, a news service.

Mexicans are increasingly suspicious of American security agencies, worrying that they operate in Mexico outside the oversight of Ms Sheinbaum's government. That impression was reinforced in July, when the FBI put on public display the aeroplane used to fly Ismael “El Mayo” Zambada, a gang boss, out of Mexico and into the United States in 2024. Mexico's government had been assured that American agencies did not take part in his capture. Ms Sheinbaum has launched an investigation.

As an issue, migration had until recently been relatively calm. Since Mr Trump returned to the White House in 2025, Mexico has helped him reduce the number of migrants crossing into the United States illegally to a trickle. But on July 7th an Immigration and Customs Enforcement (ICE) agent shot dead a Mexican in Houston. Lorenzo Salgado Araujo had lived in the United States for 35 years and was not even the target of the operation. He was the 17th Mexican to die in ICE custody or operations since Mr Trump returned to office.

Ms Sheinbaum might have kept quiet if Mr Trump had agreed to extend the United States–Mexico–Canada Agreement beyond its current expiry in 2036. On July 1st he refused. The free-trade deal will now be reviewed annually, creating uncertainty. Ms Sheinbaum was “really banking” on the extension after kowtowing to Mr Trump, says Lila Abed of the Inter-American Dialogue, a think-tank in Washington.

Ms Sheinbaum has become less obedient. She is refusing to extradite Mr Rocha Moya. Mexico's courts are unlikely to find him guilty. Two days after the shooting in Houston she said that her government would ask for criminal charges to be brought in American courts for the shootings of Mexicans whose “only crime is working honestly in the United States”.

It is hard not to feel sympathy for Ms Sheinbaum. But in hardening her approach to Mr Trump, she may be missing an opportunity. She could use his attacks as cover to tackle what the Americans have correctly identified as one of Mexico's most serious problems: political corruption. Instead, she has taken on a fierier, more leftist tone in recent speeches, while dismissing unfavourable media reports as “lies”.

Clearly, it is hard to predict how Mr Trump will react. It will be a “delicate dance” in Mexico, too, says Ms Abed. Lots of Mexicans want Mr Rocha Moya extradited. They may accept Ms Sheinbaum losing her cool with Mr Trump; less so an embrace of allies accused of corruption. ■

Asia

Technology in Asia

Crazy rich Asians

SEOUL

AI-fuelled fortunes are reshaping South Korea

AN UNKEMPT man walks into a pricey shop. The staff dismiss him—until he takes off his jacket and reveals a gilet emblazoned with "SK Hynix", a semiconductor firm known for handing out massive bonuses. This imagined scene—a recent skit on a South Korean comedy show—lampoons real ones unfolding as AI-driven wealth floods the country. Companies that help arrange marriages report a big jump in the desirability of engineers from SK Hynix and Samsung Electronics, another semiconductor-maker. They are now nearly as sought after as doctors and lawyers.

An AI windfall is reshaping South Korean society. Speaking in Silicon Valley on July 25th, Lee Jae Myung, South Korea's president, compared the AI era to the discovery of fire and called it "a truly new opportunity for Korea". But the new era also brings risks: South Korea's benchmark stock index, KOSPI, has doubled in value in the past year but dipped 22% in July. A series of wild swings have made it the most volatile stock market in the world.

Fierce debates rage in Seoul over how to ensure that new wealth is shared equitably and stewarded sustainably. "This raises a new policy challenge for us: how should we approach such extraordinary excess profits from a socioeconomic perspective and from the standpoint of national policy?" Mr Lee said during an interview with *The Economist* in June. The following month his government announced a "Future Response Fund" to invest newfound tax revenue for generations to come. The market gyrations and policy debates are a preview of processes likely to play out elsewhere as AI adoption spreads. "This is an issue that requires broader international discussion," Mr Lee added.

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31 A temple scandal in India

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Wealth is flowing into South Korea because its firms provide infrastructure AI model-makers need, such as high-bandwidth memory chips. South Korean officials speak of producing "picks and shovels" for an AI gold rush. While the gold miners may or may not hit paydirt, the pickmakers (or, rather, the chipmakers) are already flush. On July 30th Samsung Electronics said operating profit in the second quarter was 89.5trn won ($63bn), up 1,800% from a year earlier. One day earlier SK Hynix said operating profit in the same quarter grew 557%, year on year.

Their workers want a bigger share. Last year SK Hynix agreed to set aside 10% of its operating profit for bonuses. Samsung's powerful labour union threatened a strike in May, demanding a cut of soaring profits. A last-ditch agreement staved off a factory shutdown; some bonuses will exceed $400,000. Such payouts are unheard of in a country where the average annual salary is less than $40,000. A new class of workers has been minted: neither white- nor blue-collar, but "silicon-collar".

Yet the spoils have largely been limited to chip-industry insiders. The government

▸▸

recently raised its GDP growth forecast for 2026 from 2% to 3%, but that is largely thanks to booming exports. Except near chip factories, consumption has been sluggish. People outside the industry have looked to equities for a piece of the action. Retail investors poured 78trn won ($54bn) into South Korean stocks in May and June; many were burned when shares fell in July.

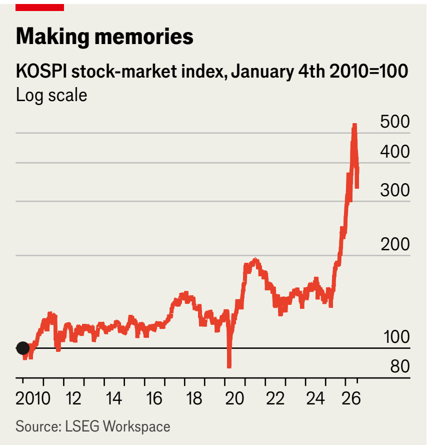
The broadest benefit will be fiscal, as corporate- and income-tax revenues flood government coffers. Corporate-tax receipts from Samsung and SK Hynix alone could yield as much as the government expected to receive in total from corporate taxation this year. Overall tax revenue is projected to reach 500trn won next year, equal to 17% of GDP and a record high.

Policymakers are grappling with how to manage the windfall. Kim Yong-beom, Mr Lee's chief domestic-policy adviser, sparked debates in May with a personal Facebook post musing about a possible "citizen dividend" funded through excess tax revenues. Speaking to *The Economist*, Mr Lee suggested that a basic income could be one of several useful policy options.

One faction is arguing for more sweeping redistribution. Chipmakers' success was made possible by "long-term public investment by the state and support from taxpayers and the public", and should be returned in part to the public, says Oh Jun-ho of the Basic Income Research Institute. Proposals include creating new top corporate-tax brackets for higher-earning companies, imposing windfall levies, or giving the public stakes in the firms. Labour groups call for funnelling the proceeds of potential new taxes first to chipmakers' subcontractors. The entire industry takes a hit during downturns, and "the same should apply when massive profits are generated", says Lee Gyeo-re of the Korean Confederation of Trade Unions.

Others see such calls as misguided. Chipmaking requires continuous investment: new levies could discourage it. The public's claim to revenues generated by private-sector electronics firms is not akin to its right to benefit from nationally owned oil and gas companies—even if some in South Korea like to compare them. It is true that AI labs have trained their models using data created by whole societies. But that is not the game South Korea's chipmakers are in, says Rhee Chang-yong, a former governor of the Bank of Korea: "They benefit from AI, but they are not AI."

For now the government is trying to strike a balance between protecting the private sector and spreading the wealth. The proposed Future Response Fund is the first attempt at creating a mechanism to do that. Mr Lee says it will use only the extra tax revenue flowing into government coffers through existing channels, and will support future industries, young people, regional development and education.


Making memories

KOSPI stock-market index, January 4th 2010=100

Log scale

Source: LSEG Workspace

Other initiatives aim to direct the next wave of investment. Last month officials announced separate plans to inject at least 20trn won ($14bn) into the Korea Investment Corporation, an existing sovereign-wealth fund, for additional investment in AI, data centres and supporting infrastructure. The government also wants chipmakers to direct capital spending to less-developed regions. South Korea is enjoying a magic moment, Mr Rhee says. "But we shouldn't have a big party—we need to think about how to maintain our competitiveness into the future." ■

Scandal in India

A crisis of faith

One of Narendra Modi's proudest achievements is under scrutiny

On July 31st Pappu Yadav arrived at India's parliament in Delhi dressed as a Hindu priest and armed with a donation box. The independent MP sat near the entrance to the building. One by one opposition MPs, including Rahul Gandhi, their leader, stepped up to drop money in the box. But on each occasion the fake priest snatched the cash, earning wild cheers from a crowd. The satirical skit was livelier than most parliamentary discussions. Mr Yadav and the others were drawing attention to allegations of large-scale theft at the Ram temple in Ayodhya, in Uttar Pradesh, India's most populous state.

Staff at the temple, which receives millions of visitors each year, have been accused of siphoning donations from devotees. Some of the alleged theft has been confirmed in a government report. The scale of the scheme is still being investigated, but some reports suggest the loot could exceed 70m rupees ($739,550). Abhishek Upadhyay, whose media outlet *Top Secret* first carried the allegations in early June, says the rot runs deeper. He claims a whistleblower has shared information with investigators alleging corruption in the process of building the temple (construction costs, he claims, ballooned from a projected 8bn rupees to 22bn by the time it opened in 2024).

The hullabaloo is embarrassing for Narendra Modi's Bharatiya Janata Party (BJP), which governs India and Uttar Pradesh. The party prides itself on probity, and the temple is its signature achievement: the culmination of a decades-long quest to build a monument on the spot where many Hindus believe the god Ram was born. A 16th-century mosque that stood there was destroyed in 1992 when a rally at its gates descended into a riot. In 2019 the Supreme Court granted Hindus possession of the site (Muslims were offered land nearby for a new mosque). When a temple was finally consecrated there in 2024, Mr Modi took part in the rites.

The temple's affairs are run by a private trust whose members include nominees of the central and state governments. It is an unusual arrangement. Most big Indian temples are run with more direct involvement from the state bureaucracy, in part to clamp down on graft. The trust has lacked professional expertise and been run like a family business, Mr Upadhyay argues.

The BJP has responded poorly. Mr Modi, long the face of the temple project, has said nothing about the issue. Yogi Adityanath, Uttar Pradesh's chief minister, has acknowledged the affair has "hurt devotees" but has also attacked the opposition for politicising it. His government formed a special investigation team. Its preliminary report, released on June 23rd, confirmed at least 70 instances of theft, abetted by lax security and shoddy governance. The findings prompted the resignations of two members of the trust. But that has not restored the faith of devotees: donations to the temple have collapsed.

Uttar Pradesh is due to hold state elections next year. These will serve as some gauge of the BJP's popularity. One recent survey found that nearly half the voters in the state would weigh the temple controversy when casting their ballots.

India's government is still recuperating from mass protests over leaked exam papers, led by youngsters who styled themselves the "Cockroach Janta Party" and forced the education minister to resign. More protests came on August 4th over a decision to make ethanol-blended petrol the country's standard fuel, which drivers fear will ruin their engines. On August 3rd the party got a taste of what all this turmoil could mean at the ballot box. In a by-election for a seat in the eastern state of Bihar, which it had held for three decades, the BJP was trounced by a political upstart. ■

AI and jobs

Call-centre nation

MANILA

The Philippines' big offshoring industry is growing despite AI

At 8PM EVERY weekday Trizza files into a lift with other workers, sits at her desk in Manila, the capital of the Philippines, and starts calling personal-injury lawyers in northern Virginia. Her job involves finding new business for an American chiropractic firm; it teams up with lawyers to treat their injured clients. Like many offshore staff in the Philippines, Trizza works long hours late at night in a language that is not her native tongue. But one thing has recently made her job easier: these days she dictates her emails to ChatGPT, which quickly rewrites them in a "professional" tone.

Trizza is surprisingly enthusiastic about a technology that some have predicted will crush her industry. Artificial intelligence is, in theory, increasingly capable of doing much of the offshore services industry's traditional work, such as transcribing notes or resolving customer queries. In July last year Sam Altman, OpenAI's boss, declared that customer-support jobs would soon be "totally, totally gone" because of AI.

Yet in the Philippines—the world's call-centre capital, where offshoring generates roughly 8% of GDP—business has so far held up better than expected. IBPAP, an industry body, reckons around 1.9m Filipinos were working in "IT and business process management", which includes all sorts of offshore services, at the end of 2025. That is 4% higher than in the previous year and 20% up from 2022. It expects revenue from the services they export to rise 5% in 2026, to $42bn, following 6% growth in 2025.

This is in part because there remain limits to what AI can automate. Handling complaints in call centres is an "incredibly messy end of a business" involving lots of processes that can't all be replicated by AI, says Derek Gallimore, who runs Outsource Accelerator, an advisory firm in Manila. "Mistakes cost a lot," says Patrick Brown, the head of another offshoring firm. "Do you trust AI agents to run support tickets on an $800,000 ultrasound machine?" Many people still want to speak to humans; Filipinos stand out as empathetic listeners who speak English well. And in any case, lots of customers are old people who struggle to use online chatbots.

AI tools are making offshore staff such as Trizza more productive (and thus better value), which is giving companies more incentive to make use of their services, says Torsten Slok of Apollo Global Management, an American investment firm. Some offshoring firms in the Philippines have been able to put up their hourly rates because their employees are fixing problems more swiftly than they were before.

Moreover, AI is helping offshore workers in the Philippines do new, more complex jobs. They are picking up work training AI models or supervising AI agents. Hospitals in America are increasingly outsourcing the checking of insurance eligibility and filing of medical records to Filipinos packing AI tools. Mr Gallimore says more "high-value" work, such as accountancy or engineering, is going offshore in part because "AI is a leveller. You can now teach someone complex stuff quickly" and still get it done more cheaply than in America or Europe. Some of this is done at so-called global capability centres, captive back offices that are booming in India (see Finance & economics section) and also now growing in the Philippines.

Tough calls

Can this apparent good fortune last? If the industry's revenues look healthy for now, there are nonetheless reasons to think it will become a less effective engine for creating jobs. Offshore firms in the Philippines admit that AI is starting to automate away "tier one" work involving simple tasks such as data entry or answering basic inquiries. New roles in accounting or health care are better-paid, but may not end up as numerous as those lost. IBPAP predicts that the number of people employed in offshore work in the Philippines will grow only 3% this year, down from 7% in 2024. The industry once talked of having 2.5m employees by 2028; in July it cut its best-case projection to 2.14m.

Some worry that the gradual disappearance of bottom-rung work is going to make it harder for Filipinos to acquire important skills. Starting in a basic call-centre job and working up has long been a way for Filipinos to rise "from minimum wage to the middle class", says David Sudolsky of Boldr, another offshoring firm. But now he worries that "the entry-level route doesn't exist". "For the already highly skilled, AI is good. But there hasn't been any upskilling," says Mylene Cabalona, the president of a union for offshore workers.

Even as AI is making offshore workers more efficient, some say it is making their jobs much worse. Kyle, who has worked in call centres in Manila since 2018, complains that his targets have recently been ramped up. He dislikes the fact that AI tools now analyse and rate the quality of his calls with customers; he feels "pressure to make each and every call good". AI "doesn't recognise if you're having issues with the family, or a bad time", he says. No one wants a robot for a boss. ■

New Zealand

No country for old men

CANBERRA

The foreign minister sparks ire with a detestable taunt

"GO BACK TO your own country," Winston Peters, New Zealand's foreign minister, shouted at Lawrence Xu-Nan in Parliament on July 29th. "That's where they lie like a flatfish," he went on at Mr Xu-Nan, who left China for New Zealand when he was a boy. The Green Party MP had angered Mr Peters by asking, in a debate about New Zealand's response to covid, if Mr Peters had been vaccinated. Helen Clark, a former Labour prime minister in whose government Mr Peters also served as foreign minister in the 2000s, said that the remark would "send a chill right around our migrant communities", and questioned whether he could still manage relations with China, to which New Zealand sells a fifth of its exports. The Chinese embassy lodged a diplomatic protest.

Mr Peters (pictured) first entered Parliament nearly five decades ago. Now 81 years old, he is the founder (and to date the only leader) of the populist New Zealand First party. Since the late 1990s he has drawn heavily on anti-Asian gibes, usually dressed up as anti-immigration rhetoric, to keep his small party in Parliament. And he has done well out of that, positioning himself as a kingmaker in both centre-right and centre-left coalition governments and serving as foreign minister three times, including in Jacinda Ardern's first government from 2017 to 2020.

Christopher Luxon, the prime minister ▸▸

The kingmaker

and leader of the centre-right National Party, has kept Mr Peters as foreign minister despite telling reporters that he regarded his words as racist. The prime minister said Mr Peters was speaking as the leader of New Zealand First rather than in his role as the country's foreign minister. But Mr Luxon must be counting the days until October 1st, when parliament is due to be dissolved before a general election in November. At those polls he is hoping to tout a still-unratified free-trade agreement with India as the centrepiece of his government's trade policy. Mr Peters has loudly opposed the deal, calling it lopsided and objecting in particular to a provision that would allow a few thousand skilled migrants to enter New Zealand. That has forced Mr Luxon to rely on Labour's support to pass an enabling bill.

Mr Peters cuts an unusual figure at the Beehive, as New Zealand's parliamentary complex is known, where the dress code is stubbornly business casual. Once considered a natty dresser, Mr Peters still wears the boxy pinstriped and double-breasted suits, topped off with a brocaded tie and silk handkerchief, that became his signature in the 1990s. Neither they nor his politics have changed much since then. But while Mr Peters looks like a throwback, his protectionist and anti-immigrant politics are now in fashion around the world. He will hope that gives him yet another chance to play kingmaker when November comes around. ■

ASHOKA

Après May, le déluge

India's monsoon is getting weirder

DEATH. AND taxes. And the southwest monsoon. Had Benjamin Franklin, the most peripatetic of America's founding fathers, ever ventured east of Europe he might have added India's rainy season to his famous dyad of life's certainties. For the 150-odd years that India has been collecting data the monsoon has hit the peninsula in early June, dumped roughly similar amounts of water over India and started retreating in late September.

It did much the same thing before modern humans started measuring it, too. For centuries the rains have dependably watered the fields, offering mostly stable harvests to premodern societies. Ancient trade routes worked to its rhythms. The monsoon allowed Gujarati merchants on India's west coast to sail out to Arabia and east Africa on the back of its winds and to return home when the pattern reversed.

In April India's meteorological department issued its forecast for this year's season. It predicted a weak monsoon at 92% of the "long-period average" of 1971-2020—below normal though not deficient. In the past that would have prompted hand-wringing about the effect on food production and prices of staples. But irrigation now covers more than half the country's farm area, and a few points are not the make-or-break variation they used to be. It is instead how the season's rainfall is distributed that keeps forecasters up at night. The monsoon is getting weirder.

Take Mumbai, where it usually starts raining around June 10th and begins to peter out in late September. Last year it rained from May until well into October. This monsoon it barely even drizzled until late June, followed by a whole July's worth of rain in just the first week of the month. Gujarat, a dryish state, has been battered by heavy downpours in short periods, with parched spells in between. On the other side of the country, in the agrarian eastern state of Bihar, farmers have gazed up at clear skies. Farther east, in Assam, a state suffering a 30% rain deficit this season, 900 villages were submerged and at least 80 people were killed last month by some of the worst flooding in decades. This year may be especially unusual because of El Niño, a climate pattern that messes around with weather patterns. But the trend is well established. Across India rain is coming harder and in shorter spurts.

The effects are felt most severely in agriculture, which employs 43% of India's workers. Farmers plan their sowing on the basis of the approaching rains. Both flooding and extended breaks from rain play havoc with their crops. Urban areas are not immune. Compared with even just a decade ago, India is more built-up and its cities more populous, magnifying the economic and physical damage wrought by extreme weather. Water shortages are another concern. Long dry periods harden the soil and deplete the ground's ability to soak up moisture and replenish its aquifers. Rain runs off into streams or simply evaporates.

The weirdening of the rainy season has a lot to do with climate change. The basic mechanics of the monsoon remain unchanged: the Indian land mass heats up in the scorching months of April and May, pulling in cooler, moisture-laden winds from the Indian Ocean. The ocean has been warming quite quickly as a result of global warming. The land, curiously, has not warmed as much. This dynamic means both that monsoon winds are slightly weaker—because the pressure difference between the land and sea is not as strong as it used to be—and that rains are fiercer, because warmer air holds more moisture. As Earth continues warming, the monsoon will become less predictable.

India cannot change the weather but it can handle it better. The meteorological department has built an impressive data-collection apparatus and is investing in improving the models that drive its forecasts. In June the government identified 111 poorly irrigated districts that might see rain shortfalls and took measures such as strengthening local water storage, boosting fodder supply and promoting hardier crops.

Yet regional and local variation in rainfall patterns means that there is only so much the national government can or indeed should do. States, cities and even villages need to plan for sudden heavy downpours, including through better irrigation and infrastructure. Meteorologists expect the monsoon's fasting-feasting tendencies to grow only more acute. To death, taxes and the monsoon, add extreme variability, too.

China

Chinese studying abroad

Peking, not Princeton

Ever fewer young Chinese are studying abroad, and more are returning home afterwards

WHEN YANG FAN, a consultant in Beijing advising students and their parents on overseas education, first joined the industry 15 years ago, those who studied abroad were held in high regard. Parents wanted their children to see the world, hoping they would pick up valuable experience and skills along the way. That is much less the case today. Parents, Ms Yang says, "feel that the quality of domestic universities isn't so bad, so they ask: 'why should I spend so much money to go abroad?'"

The number of students a country has abroad in part reflects its engagement with the world. After 2001, when China joined the World Trade Organisation, Chinese exports to the world boomed; so, too, did the number studying overseas. At first only exceptional or privileged students tended to make the move. Many then stayed, taking up positions in academia and industry; those who returned to China enjoyed high status and offers of plum jobs.

Later, as general incomes rose, increasing numbers of young men and women set off in search of a Western education in the hope of a brighter future. Yet since 2019, the pandemic, trade wars and rising geopolitical friction have driven a wedge between China and the rest of the world. Partly as a consequence, the number of students going abroad has fallen. In 2025 some 570,000 young Chinese went to study overseas, down from a peak of 700,000 in 2019 (see chart on next page); that was the lowest level since 2016.

Studying abroad has been made harder by some receiving countries. In 2025 the administration of President Donald Trump announced that it would "aggressively revoke" visas for Chinese studying in unspecified "critical fields". It has also tied the lottery for the H-1B visa—the main path for skilled workers, including new graduates, to remain in America—to salaries, which disfavours entry-level workers; anecdotally, Chinese workers are hurt more than most. Ms Hao, a 25-year-old Chinese woman, was working for a startup in America but recently chose to return to China because her visa status made it almost impossible to switch employers.

Purse strings tighten

The ballooning cost of a foreign education has not helped either. The average cost of foreign study is 605,000 yuan ($89,600) this year, nearly a fifth higher than in 2023, according to a survey by New Oriental, a big tutoring company. A weak economy at home has forced families to watch their spending and has made students more cost-conscious. Of those still heading overseas, more are going to places that deliver better perceived value for money. Though official Chinese statistics do not break down where the country's international students go, data published by other countries show that their numbers are falling in Britain, America and Canada, while rising in Hong Kong, Japan and Australia. Hong

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Kong in particular has emerged as a top choice among prospective students, says Ms Yang, because of its highly ranked schools and closeness to home. As many as four out of five of her clients enquire about studying there. Cheaper destinations such as Malaysia, where students can budget just 100,000 yuan for a degree, also appeal.

It is not just that more Chinese students are staying home—a record 10.7m entered tertiary education in China last year. Of those who do go abroad, more and more choose to come back to China after their studies. Last year the proportion of returnees, who are known as *haigui* or sea turtles, was 94% of outbound students, an all-time high (see chart). Between 2015 and 2025, 5.2m *haigui* graduates returned to China, official statistics show. This sizeable wave means that an overseas education no longer carries the same cachet that it once did. On job markets as well as on dating sites, people are much less likely to be impressed by a foreign education. Today, the average returnee from abroad gets a starting salary of about 12,800 yuan a month, only marginally higher than the 10,700 yuan for local graduates, according to New Oriental's data. Many *haigui* do far worse, with some taking on delivery gigs. On one Chinese television show, a young woman claimed that her parents spent over 2m yuan to send her abroad, only for her to get a job that paid just 4,000 yuan a month. It would take her a century to save that much, she rued.

One Chinese student, Ms Zou, pursuing a chemistry master's degree at University College London, chose study abroad because she wanted to "see the world"; but she does not expect to gain an upper hand over home-grown graduates when she returns to China seeking a job in the chipmaking industry. Domestically educated graduates will have studied for three years to get their master's, compared with just one year for her. Students from China make up some 40% of Ms Zou's class; elsewhere, the proportion can reach nine-tenths, which somewhat undermines the point that foreign universities are meant to be different from China's.

Among employers, foreign degrees no longer confer the same advantage. Short study durations and fairly low entry requirements mean that companies increasingly question the once gilt-edged reputation of a foreign education. Studying abroad does not automatically translate into an ability to fit into the workplace. Moreover, human-resource departments may also think that domestic graduates are "more obedient", says Ms Zou, since they are untainted by Western liberal influence. Some provincial governments make it harder for overseas graduates to become civil servants. In 2024 the boss of Gree, an electronics conglomerate, said she didn't hire *haigui* because they could be spies.

Meanwhile, home universities look increasingly attractive. Chinese universities have shot up the international leaderboards. Peking University and Tsinghua University, the country's two top schools, now rank 13th and 14th respectively in the QS World University Rankings. Universities belonging to the "985" and "211", monikers for an elite handful of Chinese universities, are seen as stronger than many overseas institutions (though big names like Oxford, Cambridge and America's Ivy League are still viewed as superior). In areas such as science and engineering, Chinese research excels. Tuition, typically a few thousand yuan per year at a public university, is substantially cheaper.

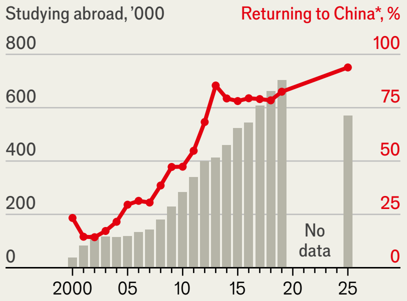
Foreign unis feel the pain

Abroad, shrinking enrolment is now hurting some universities that had become overly reliant on Chinese students. In the 2024-25 academic year Chinese made up more than two-fifths of international students at the Russell Group of 24 top British universities. Many of them expanded master's programmes to attract students from China, charging them fees far above those of home students. Faculties grew and new facilities were built. There was an "illusion of financial stability", says Filippo Boeri, at City St George's, University of London. But now universities are closing courses and laying off staff or asking them to take voluntary redundancy.

Chinese students drying up will deprive the West of valuable talent. It may also do no good for China. As the country opened up to the world, *haigui* brought home skills and knowledge acquired overseas. The group were key in helping the country to modernise and the economy to catch up (eight of the 21 current members of the Communist Party's ruling Politburo studied abroad). The international experience of the *haigui* has also helped Chinese firms seeking a foothold in foreign markets. When fewer turtles swim the seas, China will surely suffer too. ■

Swimming home

Chinese international students



*Post-studies returnees as share of outbound students
Source: Ministry of Education

Gen Z and the Cultural Revolution

Talkin' 'bout an involution

To some netizens, reviled former leaders don't look so bad

A MUCH-HERALDED film, "I Know Who You Are", by one of China's finest directors, Feng Xiaogang, proved a box-office flop when it was released in June. The film's portrayal of how a neighbourly relationship in Beijing was distorted by the grim politics of the era of Mao Zedong, including the chairman's vicious Cultural Revolution, may not have appealed to younger audiences unfamiliar with that turbulent time. Some people may have been put off by the Chinese title, "*Zhua Tewu*", which means "Spycatching", leading them to expect (wrongly) a drama leaden with propaganda.

Getting the film to cinemas did not prove easy for Mr Feng. The launch had been expected in October 2025, but its political content may have prompted censors to subject it to extra checks. At the end of the year an upsurge of online interest in one of Mr Feng's earlier films, "Youth", which was a big hit when released in 2017, may have complicated matters. Netizens' lively discussion of that film, set in part during the Cultural Revolution, touched a nerve among officials.

Certainly, the authorities do not like public hand-wringing about the Cultural Revolution. China's current leader, Xi Jinping, is particularly bothered by the practice, which he calls "historical nihilism": just listen to the official silence surrounding this year's big anniversaries relating to that tumultuous decade, which began in May 1966 and ended with the death of Mao in September 1976.

Mr Feng's new film actually examines the Cultural Revolution far less punchily than did a popular TV series of the mid-1990s that was based on the same story. But what upset officials about netizens' discussion of "Youth" was something else. To the limited extent that people are permitted to discuss the period, they must stick to the glib, official line that the Cultural Revolution was a "serious disaster" for which Mao's wicked widow, Jiang Qing, and other members of the "Gang of Four", were largely responsible.

Odd and repugnant as it may seem to many older Chinese, let alone hyper-cautious cadres, netizens were recasting one of the four, Wang Hongwen, as a hero. By idolising Wang, they were prodding at the Communist Party in as discomfiting a way as dwelling on the killing of more than 1m people by Mao's zealots and the persecution of many millions more (in Inner Mongolia, the government still gives small subsidies to disabled survivors of a pogrom by troops and Red Guard mobs in which, by the official count, about 16,000 people died and more than 120,000 were injured).

To young Chinese with little knowledge of the suffering, Wang is an obvious candidate for reinvention as an internet meme. The former security guard at a textile factory was just 37 when plucked from the local leadership of a blue-collar Mao-worshipping faction to become the party's vice-chairman in Beijing—Mao's successor-in-waiting, many thought. To netizens, he seemed to be an underdog made good, with film-star looks and brimming with admirable contempt for self-serving party bureaucrats (never mind that he had reputedly high-hogged it in the capital).

Wang, who died in prison in 1992 while serving a life sentence, does not feature in "Youth". But the actor who plays the protagonist, Huang Xuan, bears a resemblance to him. That was enough for online conspiracy theorists. One, in three videos on Bilibili, an online platform, argued that the film was laced with hidden references to the Cultural Revolution to portray it as a positive movement liberating the masses from the ruling class; the Gang of Four were blamed for atrocities actually committed by an embattled elite.

The film's screenwriter, Yan Geling, has called this absurd and said that she "hates the Cultural Revolution to death". But the online videos garnered millions of views, with commenters posting showers of Cultural Revolution-era slogans such as "Long live the people!" and "Persist to the end!" Nor have Wang fans given up. To evade censors they refer to him by nicknames such as "Little Wang" or use Huang Xuan's name instead. They interweave images of Wang with pictures of the actor and dub footage of Wang with poignant pop music, such as a song about someone wronged.

Wang, then, may have become a symbol to the type of disgruntled young Chinese who vents online about the difficulty of finding work or an affordable house, or who talks about wanting to "lie flat", a popular codeword for dropping out of the rat race. Apart from Wang's good looks, it is his rebel, working-class streak the type finds alluring—damn the facts.

In 2016 the Communist Party's mouthpiece, *People's Daily*, marked the 50th anniversary of the start of the Cultural Revolution with a commentary calling it "completely wrong in theory and practice". This year state media outlets have said nothing. The death in April of Cui Gendi, Wang's 86-year-old widow, passed unremarked in the press. Officials want to bury an extremely inconvenient part of the party's history, but young Chinese are mining it for metaphor. ■

Superstitious mayors

The geomancer's curse

Supernatural beliefs lead to lower economic growth

FENG SHUI, China's ancient practice of geomancy, is all about auspicious surroundings. Meaning "wind, water", it holds that the arrangement of landscapes, buildings, rooms and even objects around you brings about either good or bad fortune. Mirrors, for instance, should never face the bed, for that will reflect malign energy onto the sleeper. Bedroom doors directly facing the main entrance are a big taboo, since it is a quick route for all the *qi*, or vital life force, to escape. Roughly half of all Chinese say they believe in *feng shui*.

It is one thing to organise your home around *feng shui*. But plenty of officials in China appear to organise the cities they run around it, too—and that is despite the Communist Party's stated abhorrence of religion and superstition. In 2014 the party secretary of Huainan, in Anhui province, blew up a five-star hotel under construction because it was harmful to his *feng shui*. In another case from 2015, an official in Guangdong wrestled land from villagers to develop a favourable burial site for himself and his family. Officials spend public funds to reorient office buildings, consult *feng shui* masters and buy charms, the Central Commission for Discipline Inspection, the party's internal watchdog, complains. Offences related to superstition made up the biggest share of its punishments last year, according to a recent tally by the *Wall Street Journal*.

A working paper by Justin Jihao Hong of Boston University and Yuheng Zhao of Renmin University of China shines light on the deleterious effects of superstitious thinking. The researchers find that *feng shui* beliefs lead mayors to deny investment to parts of their domain they consider to be unlucky, so lowering those areas' GDP. The more superstitious the mayor, the bigger the effect.

Feng shui holds that certain directions of the compass are considered unfavourable depending on the timing of one's birth. For their analysis Mr Hong and Mr Zhao recruited professional astrologers to assess the unfavourable directions of all mayors in China in power between 2000 and 2018. With that assessment, they worked out which of the counties that fall under the mayor's sway would be considered inauspicious in relation to the mayor's residence. They then measured economic performance in those counties.

The results make for uncanny reading. All else equal, counties that lay in mayors' unfavourable directions on average experienced 2.3% lower GDP relative to those that lay in other directions. Mayors reduced policy support and investment in those counties, with the effect magnified by firms, who hired fewer employees, and households, who relocated away. Counties' local economies caught up eventually, usually about three years after the departure of the offending mayor. Still, the overall effect amounted to a loss of 0.1% of GDP a year to China's economy.

Since geomancy-driven decisions hurt the local economy, they would logically also hurt mayors' chances of promotion. But perhaps, Mr Hong suggests, *feng shui* helps to soothe the stressful uncertainty that mayors face about both future policy directions and their own political fates. ■

Geomancing the stone

CHAGUAN

A so-called rebuttal

An official study of China's manufacturing dominance elides the role of massive, Leninist intervention

"SO CALLED" is a favourite epithet in the rhetorical armoury of Chinese officials facing unwelcome foreign criticism. The officials dismiss talk of China's "so-called human-rights problems", lob insults at America's "so-called freedom of speech" and brush aside "so-called experts". Over the past week they meted out the same treatment to "so-called overcapacity" in the Chinese economy. In a lengthy new paper, the commerce ministry seeks to rebut the accusations of industrial excess levelled against China by many foreign governments and economists.

The paper is both rigorous and disingenuous. Some parts bring healthy scrutiny to the concept of overcapacity. The deep insincerity of other sections suggests contempt for countries facing waves of Chinese exports. Yet even meretricious arguments warrant attention when they are bound to start recurring as talking points in official speeches, state media and diplomatic meetings.

Start with the most intellectually honest contributions of the paper. Over time, it rightly notes, the topography of global production remains in constant flux. America dominated global manufacturing after the second world war, before passing the baton to others; China is the world's factory for now, though presumably not for eternity. The commerce ministry is also right to point out that definitions of overcapacity are slippery. More than a fifth of factory capacity is idle across Europe and America, but few talk about excess capacity there. Export strength does not, by itself, equate to overcapacity. Otherwise, why not point a finger at Boeing, which sells two-thirds of its planes abroad?

The ministry rightly highlights Chinese dynamism. Innovation, manufacturing clusters and intense domestic competition have led Chinese producers to cut costs and boost quality. Companies that emerge from the crucible of the local market are better placed to take on the world. And there are benefits to others: the global cost of electricity from solar and wind energy has fallen by more than half in recent years, thanks largely to Chinese manufacturing and technology.

That is only part of the story, though. Elsewhere, the paper elides or drifts into denialism. Certainly, Chinese companies are low-cost producers, but that is no random market outcome, for the government has helped bring it about. Officials are rarely so crude as to state openly they want to cut imports. Yet that is what comes from pursuing self-reliance in science and technology, a state objective loved by Xi Jinping. Moreover, a giant like China building up the production capacity to replace foreign imports also builds up the production capacity to lord it over global markets. For instance, in achieving its goal of sourcing domestically 80% of the parts that go into advanced ships, China has become the world's biggest shipbuilder.

The ministry's discussion of state subsidies makes an art of dissimulation. It limits analysis only to direct subsidies—merely the most superficial of the techniques that China uses to favour its own companies. Other crucial forms of support include public investment in chipmakers, cheap land and rules compelling state firms to buy domestically. In the background are the policy settings—above all, a weak social safety-net—that have engendered a perpetually high savings rate. The government often boasts about its annual import exhibitions, but so long as China's savings far outstrip its investment, its exports will, by economic definition, exceed imports. The outcome: the forging of an industrial machine that relies on global markets as its chief outlet. It is a permanent state of industrial production well in excess of China's domestic needs across virtually all sectors—in short, overcapacity.

The paper has tin-eared triumphalism aplenty. The China shock contributing to Germany losing 10,000 manufacturing jobs a month? The ministry wants you to see that as a "China opportunity". Countries cutting dependence on China? They will only hurt the world—never mind that China has long sought to cut dependence on others. Trade restrictions imposed by Europe and America on China? They undermine mutual trust; ignore that China wields trade sanctions as a geopolitical weapon.

End-station for the developmental state?

The academic debate about Chinese overcapacity speaks to a broader and more fundamental struggle under way: a material contest over the worldwide shape of industrial production. On one side is China, supremely proficient in all manner of production. In that sense the commerce ministry is correct that China is competitive. But foreign companies are competing against not just supple, hard-driving Chinese firms but a whole-of-state approach to industry. Foreign companies, however big, stand little chance against a Leninist developmental state that has attained China's size, wealth and modernity. As Rhodium Group, an American research firm, points out, the Chinese state once limited its intervention to a handful of sectors that it deemed to be strategic; now it pursues an "industrial policy of everything".

On the other side is everyone else. Whether other countries are willing or able to defend what remains of their industrial turf is an open question. For at least a decade, America has been groping for a response. It has imposed tariffs on Chinese goods and worked to reshore production; despite President Donald Trump's scorn for allies and admiration for China and Mr Xi, his administration wants to work with other countries, for instance, in securing critical supply chains. Europe is inching its way towards (embryonic) made-in-Europe plans. But both America and Europe have already run smack into Chinese dominance, above all, its rare-earth stranglehold. This is the part left unsaid in China's rebuttal of all the overcapacity talk: try as they might, other countries struggle to fight back. Industrial might makes right. ■

Middle East & Africa

The Hormuz dependency dashboard

Waste not, want not

We analyse how long Iran can weaponise Hormuz. The answer is disheartening

FOR YEARS the world has feared that Iran has been pursuing nuclear arms. Five months of war have taught the country's rulers they were already in possession of another formidable weapon. Geography and firepower give them de facto command of the Strait of Hormuz, through which a fifth of the world's oil and liquefied natural gas (LNG) normally flows. Choking that artery gives Iran's leaders immense leverage over their adversaries.

Iran's foes hope Hormuz will prove to be a wasting asset. Shutting Hormuz is "a card you can play once," said Chris Wright, America's energy secretary, in May. Gulf states are busily seeking alternative export routes. Tom Barrack, Donald Trump's envoy to Iraq and Syria, reckons the strait will be "an afterthought in two years".

The Economist has interviewed experts and analysed data to build a "Hormuz dependency dashboard" to test these claims. It points to three conclusions. First, the staying power of the Iranian threat varies by commodity and country. Second, Iran's ability to cash in on the strait will diminish but may never vanish. Third, even if the fees Iran can charge fall over time, its strategic leverage will not necessarily fade in step. Indeed, it may deepen as the regime institutionalises its regional influence.

Start with how much Hormuz traffic could simply circumvent it. Some 15m barrels of crude oil crossed the strait daily before the war. That looks easiest to divert. Saudi Arabia's east-west pipeline, which avoids the strait by crossing the peninsula to Yanbu on the Red Sea, carried just 1m barrels a day (b/d) for export before the war. Today it is running at its full 7m b/d capacity. Nearly 5m b/d of that is exported; the rest feeds coastal refineries. The United Arab Emirates (UAE) has maxed out its Habshan-Fujairah pipeline, which carries 1.8m b/d, up from 1m b/d before the war. Some 200,000 b/d flows through a smaller, once-idle Iraqi pipeline to Turkey.

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That narrows the crude-export deficit to 10m b/d. Now add new pipelines likely to be built as a result of the war (see map on next page). Acquiring land poses no problems in the Gulf's command-and-control economies, says a lawyer familiar with the subject. The most advanced project, the UAE's, would run parallel to the existing line, adding 1.8m b/d by late 2027.

Iraq aims to raise its pipeline's capacity to 1m b/d within a year. It also plans a new one to link its southern fields with existing routes to Jordan, Syria and Turkey. Contracts for the 2.5m-b/d project are being awarded: it should be done within four years, says Rahul Choudhary of Rystad Energy, a consultancy. So by 2030 another 5m b/d of crude could bypass Hormuz.

But that still leaves the same amount with no alternative route. And none of these fixes is foolproof. Iraqi projects could be derailed by security risks and cross-border rows. Many dreamed-up pipelines never see the light of day. Tankers leaving Yanbu for Asia usually sail via the Bab al-Mandab strait, where they are vulnerable to attacks by Iran-allied Houthi rebels. Saudi crude could travel via the Suez canal or Egypt's Sumed pipeline. But even that route may not be safe: on July 29th a drone hit a tanker at Damietta, a port near Suez.

Iran—or its proxies—could attack new infrastructure that it fears depletes Hormuz's power. Even if a deal is reached, the risk of attacks could still push up insurance and financing costs for such projects.

Rerouting refined products is even harder. Gulf countries shipped nearly 5m b/d of petrol, diesel and other fuels via Hormuz last year. No overland pipeline alternatives exist for these. Saudi Arabia is planning one as part of a 2m-b/d expansion to its east-west corridor. But that is still at an early stage and would need a similar increase in Yanbu's capacity. Iraq is sending 1,000 lorries of fuel oil to Syria a day, up from ten pre-war, but the route is slow and pricey. Syria has earned $15m-20m in transit receipts from the traffic since the war began. New refineries outside the Gulf would take longer to build than pipelines and cost billions of dollars.

The problem is most acute for LNG, exported almost exclusively by Qatar. No LNG pipeline is under construction and no feasibility studies have been published. Qatar could lay simpler gas pipes to Oman, but they would need to carry as much gas as Russia's four-string Nord Stream pipelines were once scheduled to deliver to Europe. More implausible still, Qatar's entire liquefaction complex would need recreating on the Arabian Sea coast.

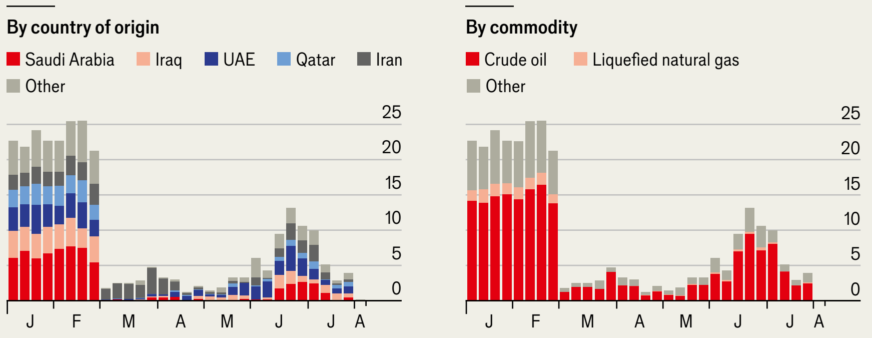
There is some room for hope. Most importers can, in time, wean themselves off Hormuz supplies. A few years of high prices could spur an extra 2m-3m b/d from the Americas and beyond. China's refineries still hold ample spare capacity. LNG is riding the fastest expansion in its history. So Iran's leverage over global prices will weaken before the decade is out.

The same is not true of its hold over its Gulf neighbours—and not just because a sizeable share of their energy exports will still need Hormuz for years. Many also depend on the strait for imports. The Gulf Arab states rely on external suppliers for 95% of their grain, but only Saudi Arabia has decent bulk-handling terminals, and these are not big enough to supply the whole region. Nor is moving lots of grain, iron ore or bauxite overland viable: a single Panamax vessel carries 60,000 tonnes of cereal, enough to fill 2,000 trucks.

One obvious fix would be more regional railways, but these would also be slow and costly to build. Past mining-railway projects in Australia, built across similar terrain, have cost $12m-15m a kilometre. So a Red Sea-to-Qatar line could top $25bn.

Feeling the squeeze

Trade passing through the Strait of Hormuz, 2026, tonnes, m

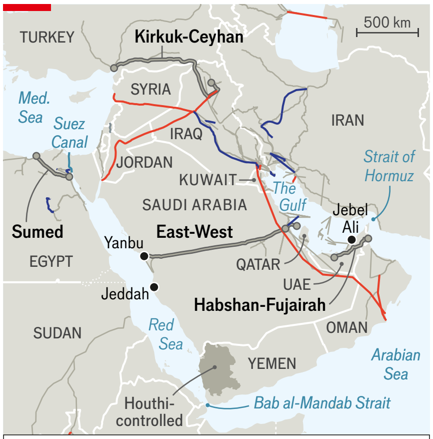


Source: Kpler

The Gulf states have strategic grain stockpiles that typically cover four to six months of demand, but no equivalent for containerised goods such as fresh food, medicines and appliances. The region's biggest container port, Jebel Ali, which has a capacity for nearly 20m 20-foot equivalent units (TEU) a year, sits inside the Gulf. Outside the strait, the largest is Jeddah, which can hold 7.5m TEU. It was already running near full tilt before the war, says Alexis Ellender of Kpler, a data firm.

So our analysis suggests that Iran will be able to weaponise Hormuz for some time—and monetise it. Gulf states' varying exposure may mean they diverge in what they will tolerate to get their ships moving. Qatar has suggested that it could accept temporary fees; others have held a tougher line. But even the hawkish UAE has softened: it is starting to trade with Iran again and their diplomats are talking.

On August 5th an Iranian official said the regime had agreed on a transit route with Oman and urged “certain third parties” not to meddle. Assuming this gives Iran control of Hormuz, how much could it make? An Iranian MP claimed in June that the country was collecting $1.5m-2m per vessel transiting the strait. That implies takings of more than $35bn a year, assuming traffic at about 70% of pre-war levels.



Oil and gas pipelines, June 2026

Source: Global Energy Monitor

That figure is eye-popping—and implausible. Rates set at gunpoint, in a market with nowhere else to go, will not survive a deal allowing near-normal flows to resume. Draft legislation submitted to Iran's parliament envisages rates based on cargo volume, value and vessel type, with one constraint: the charge must stay below the cost of the next-best alternative.

Gimme, gimme, gimme

Shahin Iraninejad of GSSI, a sovereign-risk adviser, points out that another legislative proposal posits an average fee of €3 a tonne in Iranian waters and €2 in international waters. He puts expected future income at a more modest $2bn-3bn a year. As bypass capacity grows, that would drop—but not uniformly. Crude tankers can hope for a bargain soon; oil-product, LNG and bulk carriers may face higher fees for years.

Would such revenue flows be durable? As long as charges are predictable, easy to settle and below war-risk premiums, many shippers will probably pay, says Richard Meade of *Lloyd's List*, a shipping journal. But that would change if vessels repeatedly cross the strait without paying Iran. A tension emerges: Iran needs peace with America for its fee regime to function. But it will need to keep up attacks on disobedient tankers to ensure the fees are paid—which could make peace hard to maintain.

On the brighter side, Iran might drop its fees faster than it needs to. Its strategic objective, says Mr Meade, appears to be maintaining market participation and reinforcing its role as gatekeeper, rather than maximising revenue. It wants something lasting: a governance system—whether a bilateral framework with Oman, a maritime-services architecture or a permit regime. The ease with which Iran seized its new weapon shocked its foes. Its grip on Hormuz looks set to outlast the war. ■

Gaza

Call to disarm

JERUSALEM

Israel and Hamas look uninterested in Donald Trump’s declarations of peace

TEN MONTHS after the ceasefire that was supposed to end the war between Israel and Hamas, Gazans are still burying their dead. On August 4th a funeral was held in the Sabra district of Gaza city for 112 people killed by an Israeli air strike in November 2023. Thousands are still missing. Israel still does not allow heavy machinery, needed for excavating the ruins and rebuilding, into the strip. The slow pace at which bodies are being retrieved from beneath the rubble is a stark reminder of the lack of any progress in Gaza.

An announcement from Donald Trump seemed to herald a breakthrough. On July 30th the American president proclaimed “a HISTORIC agreement for the COMPLETE DISARMAMENT of Hamas and all other armed groups in Gaza”. It was, he said, “a monumental step towards lasting PEACE and SECURITY”.

The president’s florid words were supported, more soberly, by the Board of Peace he founded in January to oversee implementation of the ceasefire. Its road map laid out steps for the disarmament of Hamas as well as a full Israeli withdrawal from the territory, the transfer of power from Hamas to a new Palestinian technocratic authority, and the creation of conditions for the reconstruction of the devastated coastal strip.

The two belligerents were quick to push back against Mr Trump’s declaration. A senior Hamas official said the group was not disarming; it would simply be storing its weapons in Gaza under Palestinian supervision. Binyamin Netanyahu, Israel’s prime minister, took five days to respond to Mr Trump’s announcement. He then issued a statement which did not confirm that Israel had accepted the deal. He merely said that his government was “looking into it”. In the meantime, his officials had been briefing anonymously that Israel had no intention of ceasing its operations against Hamas in Gaza or withdrawing before Hamas’s military capabilities were fully dismantled. Israel then launched a flurry of air strikes in Gaza, killing 19 people in just 24 hours.

There is a similar dynamic on each side. Both have been under pressure for months, Israel from America and Hamas from Egypt, which (along with Israel) controls access to Gaza, and its patrons, Qatar and Turkey. Both hope the other scuppers the deal. “No one is holding their breath,” says an Israeli official. “We don’t believe Hamas will ever disarm voluntarily.”

Much remains unclear. The Board of Peace said a timetable for disarmament would be worked out within 14 days, but it did not specify when that period would begin and noted that it could be extended. Beyond that, how will the decommissioning of Hamas’s arsenal take place and who will be the members of a new International Verification Committee? What will be the sequencing between disarmament and further Israeli withdrawals? How will power be transferred from the current Hamas government to the new National Committee for Administration of Gaza (NCAG)?

Under pressure from America, on July 26th the Israeli cabinet voted to allow the 15 NCAG members to enter Gaza at last and the initial deployment of the International Stabilisation Force (ISF). But the date for the NCAG’s arrival has not been set, nor is there much idea how it will wield power in Gaza. The same is true of the first 200 ISF peacekeepers, expected from Morocco and Uganda. Israel is demanding that its troops be allowed to continue operating in areas where the ISF is nominally in charge.

This continues a pattern of obstruction by Israel’s government ever since Mr Trump presented his peace plan in October 2025, aimed at ending the Gazan war in which over 73,000 people, mostly civilians, have been killed. Israeli forces have kept up their air strikes, albeit at a lower tempo than during the war, killing over 1,200 Gazans since the ceasefire, and have steadily encroached beyond the “yellow line”, the boundary between the half of Gaza controlled by Hamas and the half occupied by Israel. Gaza’s 2.1m inhabitants are now huddled in about a third of its total area. Around three-quarters are displaced, their homes either destroyed or in the Israeli occupation zone, or both. Israeli restrictions on supplies going into Gaza mean that no serious reconstruction has begun.

If there is any glimmer of hope, it is that the argument in Israel about whether to keep the ceasefire is over. In recent months Israeli officials had talked up the prospect of another large-scale campaign in Gaza to enforce disarmament. Mr Trump’s renewed engagement has at least squelched those suggestions for the time being. “Any progress is going to be at a snail’s pace,” said a diplomat involved in negotiations. “That’s still better than the alternative.”

Real change is unlikely until after Israel’s election on October 27th. Mr Netanyahu is under fire from the far-right ministers in his own cabinet, who want him to publicly reject the Trump plan, and from his opponents, who deride his failure to deliver his much-promised “total victory” over Hamas. Hostages to Israeli politics, Gazans will continue belatedly to bury their dead and wait for something better. ■

African agribusiness

Fresh thinking

CAPE TOWN, HARARE AND MACHAKOS

A surge in fruit exports shows how agriculture can spur industrialisation

“IT’S A HIVE of activity,” says Alistair Campbell, observing the scene at his blueberry farm 40km outside Harare, the capital of Zimbabwe. Hundreds of workers pick the fruit from the bushes, before carrying the bounty to a cold-storage facility. After sorting, the berries are flown to east Asia, where demand is high for the largest globules, or shipped to Europe. “We’re flat out,” says Mr Campbell, who used to captain Zimbabwe’s cricket team. “We could sell our crop five or six times over.”

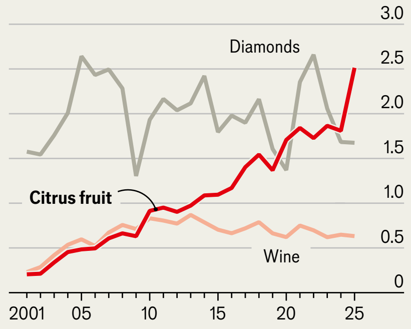
For once the colour associated with a boom in Zimbabwe is blue, not gold. This year Zimbabwean growers expect to export 12,000 tonnes of blueberries, 40 times more than in 2017. “Every man and his dog is planting blueberries,” says one of the country’s most prominent bankers.

The tiny fruit contains a bigger lesson. Manufacturing has struggled in sub-Saharan Africa: its share of output has been more or less flat for 15 years. That worries analysts who think African growth depends on Asian-style, export-oriented factories. Yet high-tech farms are in effect mini-factories, labour-intensive and linked to global supply chains. This “industrialisation of freshness”, in the words of Christopher Cramer, an academic, could be a boon for Africa—and force a rethink of what is meant by farming and manufacturing.

Africa’s economic history has left policymakers with an ambivalent view of agricultural exports. Under colonial rule many countries exported just a single crop, a model that remained after independence. From 1966 to 1973 almost half of sub-Saharan African countries earned half their export revenues from a single commodity. ▸▸

The orange revolution

South Africa, selected exports, $bn



Source: International Trade Centre

More precious than diamonds

When prices plummeted, economies crashed. That helps explain why many governments diverted resources from farms to half-baked industrial schemes.

But in recent years African agribusinesses have responded to rising global incomes—and demand for fresh produce. The Africa Agriculture Trade Monitor, an annual report, notes that over the most recent decade for which it has data, "fruits and nuts" became the continent's largest agricultural export, overtaking cocoa. The shares of traditional cash crops like cocoa, cotton, tobacco and sugar all fell.

Africa still lags behind Latin America, which exports four times as much in agricultural goods (an average of $341bn per year in 2019-23 compared with Africa's $81bn). Peru, which barely exported blueberries in 2010, was the world's largest exporter a decade later. But if Africa can learn from such success stories, there will be fruitful returns.

"Blueberries are a great example of agriculture as high-tech industry," argues Daniel Hulls, the boss of AgDevCo, an investment fund. Driscoll's, an American agribusiness giant, supplies seeds to farmers in Zimbabwe that are the result of years of cross-pollination. Polyethylene covers protect bushes. Storage rooms have optical sorting machines. To maximise profits, firms time production for the summer, after American supply dwindles but before Peru's picks up.

Blueberries are not the only example of Africa's "industrialisation of fresh". Today Kenya and Ethiopia account for 6% and 2% of global cut-flower exports. Their farms feature machines that spray fine mist, purify water by reverse osmosis and point radium bulbs at petals to prettify them.

Africa's exports of tropical fruits, such as avocados, mangoes and pineapples, have more than tripled over the past decade, a faster growth rate than in any other region, according to the Food and Agriculture Organisation, a UN agency. Last year Europe consumed more than 1m tonnes (roughly the weight of ten aircraft carriers) of avocados for the first time. Much of its demand was met by Morocco and Kenya.

In May, for the first time, South Africa replaced Spain as the world's largest exporter of citrus fruit. Since overtaking wine in 2010, citrus has been the country's most valuable agricultural export, and recently has earned it more than it gains through diamond exports (see chart on previous page). The success can be traced back to 1997 and the abolition of state-run marketing boards. Before then the government divided export revenues among farmers; thereafter each farmer kept their own profits and had more incentive to invest in their fruit. Industry experts also stress the role of the Citrus Growers Association (CGA), which takes levies from farmers to carry out research, lobby for better policies and disseminate know-how.

The special benefits some economists ascribe to manufacturing seem to apply to tech-savvy farms. Their exports boost trade balances. They employ hundreds of people. They help create other products and firms along supply chains. "These are integrated manufacturing and logistics businesses," says Wandile Sihlobo, a South African agricultural economist.

Jane Maina, the boss of Vert, a tropical-fruit firm in Kenya, says she has moved into exporting dried snacks. The new range means fewer mangoes and pineapples sourced from smallholders are wasted, raising farmers' productivity. The cold-storage facilities built at east African airports for the flower business are now used by exporters of herbs, beans and vegetables. The blueberry rush in Zimbabwe has led to new "agritech" apps monitoring weather conditions and yields. In South Africa the citrus boom has produced several spin-off research firms.

Sadly, bad roads and clogged ports still make it hard to deliver perfect fruit. African farmers, like many elsewhere, complain about inadequate political support. Some have a point. When Ethiopia's flower business started, the government at the time provided armed guards for airport-bound lorries. Now exporters complain of being stopped by armed bandits.

The good news is that potential markets are opening. In May China stopped applying tariffs to most African imports. In July the first punnets of blueberries from Zimbabwe were sent there. Yet non-tariff barriers, such as food-safety and plant-health regulations, often prove trickiest. Managing them needs concerted diplomacy and dedicated industry bodies, such as South Africa's CGA.

The success of Zimbabwean blueberries, Kenyan flowers and South African oranges suggests there is huge potential for African agriculture to play the sort of role long envisioned for manufacturing. But to maximise the fruits of their labours African policymakers will need to help ensure that their firms are globally competitive. Time for fresh thinking. ■

AI in Africa

Lean and local

African AI pioneers favour tools suited to specific tasks that use little compute

WHAT WOULD African artificial intelligence (AI) look like? Olubayo Adekanmbi, a Nigerian entrepreneur, reels off ideas: as fluent in African languages as in English; as comfortable with speech as with text; and lean, so it can flourish where chips are scarce and internet patchy. By contrast, frontier labs in Silicon Valley train gargantuan models on English-heavy datasets. "The current gameplay for AI globally is completely un-African," he says.

Which is why two years ago, after a career in telecoms, Mr Adekanmbi co-founded EqualyzAI. The startup has designed tools to advise mothers on health, help traders with accounts and handle customer calls for banks, in English and four Nigerian languages. Similar outfits are springing up all over the continent.

They might seem redundant, given the spread of frontier models. Microsoft estimates that among people of working age 8% of Ethiopians, 9% of Congolese and

23% of South Africans have used generative AI. OpenAI says the number of ChatGPT users in Africa is growing faster than in any other region, albeit from a low base. Chinese models are also popular.

But even the best large language models (LLMs) falter in African languages, typically scoring 10-30 percentage points lower on benchmarking tests than they do in English. They struggle with dialects and "code-switching", such as when speakers skip between English and a mother tongue. For smaller languages, much of their training is on Bible verses. Asmelash Teka Hadgu of Lesan AI, which works on machine translation and speech recognition for languages from the Horn of Africa, argues that existing models are "broken" for everyday speech. That is especially true for languages like Amharic and Tigrinya, which use non-Latin scripts; in other major tongues gains have come faster.

The root problem is lack of data. Common Crawl, a database used to train AI models, scraped 872m English web pages in July, but just 80,000 in Amharic. Across African languages, only Swahili was better represented than Welsh.

High-quality audio for speech recognition is also scarce. African researchers are therefore recording how people talk, with backing from the likes of Google and the Gates Foundation. Audace Niyonkuru of Digital Umuganda, in Rwanda, says his firm strives to get a balance of ages, genders and dialects.

What then? African researchers use new datasets to fine-tune open-weight models (whose training parameters are public), which uses less compute than building from scratch. Jacaranda Health, a Kenyan NGO, trained Meta's Llama2 in Swahili, so it could advise on maternal health. But even after fine-tuning, such models are often worse at general tasks than a proprietary model.

Another focus for African innovation is so-called "small language models" for specific tasks, which have at most a few billion parameters (frontier LLMs have trillions). Lelapa AI, a South African lab, named its 400m-parameter model InkubaLM, after the isiZulu word for dung beetle, which can move many times its own weight.

Smaller models can be run locally, or even offline. That keeps sensitive data on the continent. EqualyzAI has built a local model for the government of Kano state, in northern Nigeria, which allows officials to query documents and recordings of meetings. "If you want sovereignty, keep it small," advises Mr Adekanmbi.

All this amounts to a somewhat counter-cultural vision of AI, prizing modesty over scale and context over omniscience. It may not survive the all-conquering ambitions of Silicon Valley. But for now African researchers have found a niche. ■

Nigeria

Builder-in-chief

LAGOS

A close friend of the president is racking up infrastructure contracts

DURING FLASH floods in Lagos last month the water crept up to car doors and poured into homes, disrupting life in Nigeria's commercial capital for days. Climate change is the main culprit for worsening flooding. But in poorer parts of Lagos some residents wonder if other factors could be exacerbating the damage. They worry that the construction of a coastal motorway and a sea wall, built to protect a new luxury waterfront district, may be eroding the seashore, worsening the impact of floods along the coast.

Yet residents may find it hard to get information about the impact of either project. Both are part of a $20bn infrastructure portfolio overseen by firms controlled by Gilbert Chagoury (pictured), a Lebanese-Nigerian billionaire and long-time friend of Bola Tinubu, the president. Mr Chagoury is not known for transparency.

Since its founding in 1971, the conglomerate the billionaire runs with his brother has dabbled in everything from flour mills to luxury hotels. Its infrastructure work has expanded on Mr Tinubu's watch. Apart from the $11bn coastal motorway, the sea wall and the $6bn property development the wall protects, the group has also been put in charge of two port renovations to be paid for largely with a £746m ($1bn) loan guaranteed by the British government. International banks, including France's BNP Paribas Fortis and Belgium's KBC, helped finance the waterfront district.

Gilbert Chagoury, businessman

Nigeria's government argues the Chagoury group's firms win many such projects because they deliver world-class infrastructure competently and efficiently, which few Nigerian companies can do. Yet critics claim the government has allowed the firms to bypass proper procurement and environmental rules. "There was no competitive bidding. There was not even restricted bidding," Funso Doherty, an accountant and opposition politician, says of the coastal motorway. Mr Doherty filed a lawsuit against the government and HiTech, the firm building the road, alleging that it broke ground without the legally mandated environmental-impact assessment. A court threw out his case, arguing it was not his to bring. Such dismissals are so common that few people bother with legal challenges; Mr Doherty expects the appeal process to take years. (The government says HiTech was the fair winner of a selective bidding process and the road's environmental impact was assessed before construction. Mr Chagoury and HiTech did not respond to a request for comment.)

Awarding infrastructure contracts based on merit is all the more essential because Nigerian projects are growing larger and pricier and are often financed by debt. The coastal motorway may also benefit from special tax breaks. In April the legislature approved a $516m loan to fund a cross-country motorway a Chagoury firm was awarded without bidding. (The government says it was selected for its expertise.) Nigeria had a fiscal deficit of 19.4trn naira ($12.8bn or 4.4% of GDP) in 2025. The IMF reckons it may be even larger, as about 8.8trn naira ($5.8bn or 2% of GDP) of public spending seems to have gone unreported (the finance minister disputes this).

To some in Nigeria, the relationship between the president and his master-builder smacks of a bygone era. In 2000 a Swiss court convicted Mr Chagoury of helping Sani Abacha, Nigeria's last dictator, launder millions of dollars of stolen public funds. Mr Chagoury said he did not know the money he was moving had been stolen, but returned $66m to Nigeria and paid a fine of 1m Swiss francs ($600,000 in 2000). Abubakar Bagudu, now the minister in charge of dispensing public money, paid $163m to Nigeria in 2003 to settle a case related to Abacha's looting of the state, without admitting guilt.

Mr Chagoury's star is unlikely to fade soon. Mr Tinubu, who is counting on his friend's support for a re-election bid next year, has brushed off criticism of the relationship; the sea wall will avert "a disaster greater than a tsunami". In January he gave Mr Chagoury Nigeria's second-highest national honour. "With friends like him," the president said in 2024, "one can sleep with a still mind." ■

Europe

The EU’s migration woes

Drawing the wrong lessons

CEUTA AND MADRID

Europe’s panic over a brief migrant surge in Ceuta will encourage more crises

IT WAS LIKE a tide surging onto the beach and then ebbing, leaving wreckage behind. The vast majority of the tens of thousands of would-be migrants who began rushing into Ceuta, a small Spanish exclave on the north African coast, on July 30th returned to Morocco within 24 hours, having found nothing to eat and no prospect of reaching Europe. Discarded shoes and shirts still litter the bay. A few thousand migrants remain, mainly sub-Saharan Africans and minors, as does a heavy police presence. Yet though the immediate crisis is over, the clash it triggered in the European Union will leave scars.

The surge almost doubled Ceuta’s population of 84,000, briefly overwhelming the town. At least 141 migrants drowned trying to swim around the breakwater at the main crossing-point from Morocco. Far-right agitators from Europe, several of whom flocked to the exclave, inflamed the situation with videos warning of “ethnic replacement”. Elon Musk and J.D. Vance, America’s vice-president, joined the fray. Yet as alarm spread the crisis was abating. On August 4th Spain’s interior minister said that 70,000 of the 72,000 who entered Ceuta had returned to Morocco. Some 1,100 unaccompanied minors are to be transferred to Spain.

Not all the factors behind the surge are clear. A recent ruling by Spain’s Supreme Court, which excluded migrants arriving by sea from rules allowing border pushbacks, played a role. Migrants still in the exclave attest that word of this got around on social media. “The Spanish government is easier for migration” than others in Europe, claims Asif, who says he travelled 20 days from Sudan before joining the surge. Some see the hand of Morocco itself. There is plenty of evidence that border guards stopped intercepting the migrants or even helped them on their way—before co-operating in their repatriation.

The extraordinary images prompted panic across Europe. Italy, backed by Denmark and Finland, said it would suspend co-operation with Spain in the passport-free Schengen zone (in the end it imposed minor spot checks at ports and airports). Sweden’s prime minister, facing a tricky re-election bid next month, said “2015 must not happen again,” a reference to a huge migration surge into Europe that still haunts governments. Conservative politicians said Spain’s recent amnesty of illegal immigrants, mainly Latin Americans, who one day may be able to move elsewhere in the EU, might have served as a pull factor.

European irritation at Spain’s rejection of NATO’s spending targets did not help its case. But Pedro Sánchez, Spain’s Socialist prime minister, hit back, denouncing the lack of solidarity as “driven by prejudice, fake news, ignorance or political interest”. Travel from Ceuta to the mainland requires the inspection of documents, he noted, so migrants could not enter Europe.

▸▸

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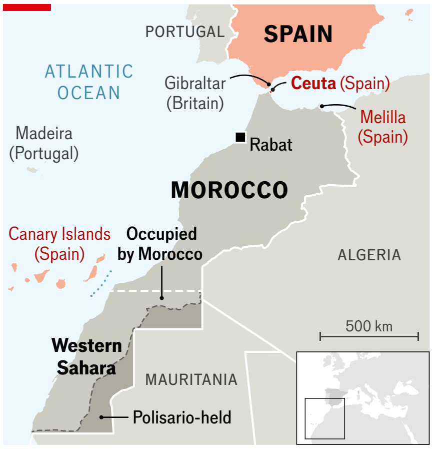
— Charlemagne is away

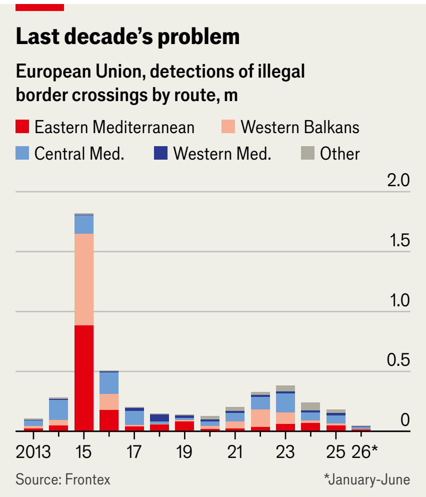
By August 4th, when the EU's interior ministers held an emergency videoconference, all had been forgiven. There was "full solidarity with Spain", said Magnus Brunner, the EU's migration commissioner. Gone was talk of expulsion from Schengen. Instead the ministers retreated to familiar talking-points: strengthening the EU's borders; tackling smuggling networks; speeding up returns of failed asylum-seekers, including to third countries.

Irregular migration to the EU is at a fraction of the figure just three years ago (see chart), and is still falling. European governments credit their own policies for the decline; others see external developments, such as the fall of Bashar al-Assad in Syria, as decisive. Either way, the drop does not appear to have opened up breathing-space for politicians. "We haven't really learned the lessons from that episode," says Ruben Andersson, a professor of social anthropology at Oxford University.

Troublingly, by falling so quickly into quarrels, European governments have sent their neighbours a signal: nothing divides the EU like images of young men streaming across borders. Over the past decade Europe has struck a series of deals with governments to keep migrants away: starting with Turkey in 2016, and extending across north Africa and beyond. This outsourcing has reduced the pressure. But it also "creates an incentive to third countries to stir up crises—and offer to resolve them", argues Mr Andersson.

Europe has long experience of such migration blackmail. In 2008 Muammar Qaddafi, then Libya's dictator, secured billions from Italy to keep African migrants away; two years later he warned an audience in Rome that "tomorrow Europe might no longer be European and might even be black". Recep Tayyip Erdogan, Turkey's president, has extracted billions from the EU to keep Syrian refugees in his country. In 2021 Morocco let some 8,000 people wade into Ceuta in retaliation for letting the leader of Polisario, a rebel group in Western Sahara (a territory annexed by Morocco), visit Spain for medical treatment. Spain later adjusted its policy on Western Sahara to Morocco's liking.




Last decade's problem

European Union, detections of illegal border crossings by route, m

Source: Frontex

*January-June

Most shamelessly, since 2021 Belarus has flown in Middle Eastern migrants and sent them into Poland and neighbouring states. Regarding this as an act of hybrid war, in 2021 the EU strengthened its sanctions on Belarus, an ally of Vladimir Putin. It is a different story with the external custodians of the EU's migration policy. Although there is no clear evidence that Morocco orchestrated the movement of migrants, its security officials certainly let them stream past. Yet European governments hailed Morocco's co-operation, reserving their animus for nameless malefactors on social media and smuggling gangs. The EU needs Morocco's help to keep migrants away, including from the Canary Islands, a far more significant port of arrival.

In fact Ceuta, a small exclave on another continent de facto excluded from the Schengen area, offers few lessons for Europe. In 2015 politicians in Germany or Sweden who saw hundreds of thousands of Syrian and other migrants reach Greece understood this would soon be their problem. That inspired a multitude of measures, including enduring intra-Schengen border checks and a new asylum pact to speed returns from the EU. But none of this is relevant to Ceuta, from where no migrants made it into Schengen and few appear to have lodged asylum claims. "This was not primarily a migration crisis," says Gemma Pinyol-Jiménez, a migration expert at Instrategies, a consultancy. "It was a geopolitical episode."

Yet, as the panicked reactions suggest, 2015-16 casts a long shadow. Arguments among European governments during that crisis came close to tearing the EU apart. By letting a temporary and far smaller emergency exert a comparable effect, however briefly, Europe has invited its neighbours to manipulate it again. Stronger borders were meant to prevent that. ■

Iceland's referendum

Shifting plates

KEFLAVIK AND REYKJAVIK

Iceland is divided about joining the EU

ICELAND SITS on the geological boundary between North America and Eurasia, equidistant from New York and Athens. It is tied to America by long-standing defence arrangements and hosts a NATO base in Keflavik. It is linked to Europe by history (it won independence from Denmark in 1944) and commerce (it belongs to the European Economic Area). Now, amid transatlantic tension and concerns about Donald Trump's intentions in the Arctic, the country is about to vote on whether to take a step closer to the European Union.

On August 29th the island of 400,000 people will hold a referendum on whether to restart membership talks with the EU. Iceland began these nearly two decades ago, but ended them in 2013 after electing a Eurosceptic government. Voting yes will not commit the country to joining the EU; another vote would take place when talks conclude. Yet the pro-European camp is worried. Two polls in June and one in July showed a majority of just 52-53% for restarting talks. That lead is too close for comfort and could easily be reversed.

Weak Euro-enthusiasm appears to fly in the face of today's geopolitics. Iceland does not have its own armed forces. It relies on rotating air-force deployments from NATO countries to Keflavik. With only coastguard ships at its disposal, Iceland leans on American and European aircraft to monitor the growing activity of Russian

The widening Euro-American rift

submarines nearby; in June a Russian spy ship was detected just outside its waters. The government worries about hybrid warfare and attacks on infrastructure.

These days such arrangements seem less solid. On a chilly day in July the NATO base in Keflavik was strangely quiet. American planes were “a little bit occupied in the Mediterranean”, said an Icelandic official. Mr Trump’s threats to annex Greenland, just 300km away, feel uncomfortably close to home.

The EU is not primarily a security club, although it does have a mutual-defence clause. For a small country, however, the union offers collective support against bullying over territory or trade. After Mr Trump’s threats to Greenland, which is an autonomous Danish territory, several EU countries sent symbolic detachments of troops at Denmark’s request. France’s president, Emmanuel Macron, flew to Greenland to show support. “When trade and tariffs have been weaponised,” says Thorgerdur Katrin Gunnarsdottir, Iceland’s pro-European foreign minister, “we should at least as a small nation consider where we secure our interests...For us it was important to see how steadfast the European Union stepped in.”

In recent weeks, however, anti-EU campaigners have stepped up their efforts. They are a motley coalition of hard-left and hard-right nationalists, as well as conservatives, backed by the country’s big fishing-industry lobby and media interests. In a fiercely independent country, they draw on long-standing worries about protecting fishing waters and agriculture, as well as submitting to the EU rulebook. But the debate has hardened. False claims abound. One is that this is a referendum on joining the EU; another, that Icelanders would have to join a European army.

For the EU, the prospect of a new recruit on the north-western periphery is welcome. Unlike applicants to the union’s south and east, Iceland has an income per head well above the EU average, and much of the accession homework has already been done. The European Commission has said there is “room for flexibility” on fishing rights. Yet European leaders are treading carefully to avoid any hint of interference. When Jean-Noël Barrot, France’s foreign minister, visited Reykjavik on July 20th (in part to discuss security co-operation), he declared cautiously that “the Icelandic people have nothing to lose by opening negotiations.” The choice about joining, he stressed, would come later.

A no vote would nonetheless be a symbolic blow. “We haven’t known anything except security protection by the US,” says Bogi Agustsson, a veteran Icelandic broadcaster. “A lot of people in the country are in a state of denial and don’t yet see Europe as a security alternative.” ■

Italy, Spain and the EU

Half a boost

FLORENCE AND MADRID

Did the EU’s post-covid fund help Spain and Italy?

NOT SINCE the great flood of 1966 has Florence known such disruption. A tramway extension has turned the road fringing the city centre into a construction site. Costing €500m ($576m), it is the city’s biggest project financed by NextGenerationEU, the European Union’s post-covid recovery programme. The scheme is paying for 55 other projects in the Tuscan capital, from crèches to cycle paths. Sara Funaro, the mayor, calls it “a momentous juncture in the history of Florence”.

Across the Mediterranean, Madrid’s wholesale market is abuzz at 5am. It includes one of the world’s biggest fish markets. With a grant of €400,000 in NextGenerationEU funds, the fishmongers’ association has set up a digital payment-and-order system, replacing handwritten orders and long queues at the bank. “It’s saved us a huge amount of time,” says Christian Cobo, as he prepares to sell tuna from huge carcasses.

At NextGenerationEU’s heart is its Recovery and Resilience Facility (RRF), created during the pandemic in 2020, which has approved €577bn in grants and loans. The EU had never spent so much, so fast. Most important, it was funded by joint bonds; advocates of a stronger EU termed it a “Hamiltonian moment”, citing the decision by America’s first treasury secretary to empower the federal government by assuming the states’ debts. It aimed to speed recovery from the pandemic slump, especially in the poorer south, and to make the continent greener and more digital. Disbursements were supposed to be linked to reforms to make economies more efficient. The last payments are due by the end of 2026. Has it worked?

The answer seems to be: sort of. The biggest recipients were Italy (€194bn) and Spain (€103bn), which together account for 52% of the funds. At first glance Spain has done a lot better than Italy (see chart on next page). When the RRF started, Italy’s government reckoned its rate of economic growth would soar from its previous annual average of around 1% to 3.6% this year. In the event, annual GDP growth has been below 1% since 2023. By contrast, Spain has achieved robust growth of at least 2.5% in each year since 2021.

Some of this divergent performance is explained by the way each country used the RRF. Italy risks emerging from the programme “more indebted than before, without having solved its structural weaknesses”, according to a paper by Tito Boeri and Roberto Perotti of Bocconi University in Milan. Many of Italy’s schemes were “trivial or unfeasible”, the economists conclude. Unlike Greece’s strategic plan for the funds, Italy’s lacked coherence.

Much of Spain’s economic performance has little to do with the RRF. “The recovery from the pandemic recession was much faster than everyone expected,” says Ignacio de la Torre of Arcano Partners, a financial firm. Spain has approved some useful reforms. It has barred employers from abusing workers by keeping them on temporary contracts indefinitely, and has reduced regulatory obstacles that hinder small businesses and startups. Still, productivity growth remains modest, at 0.7% last year, according to Eurostat.

Massive immigration, which has added labour, accounts for around half of the headline growth and two-thirds of additional jobs, according to the Bank of Spain. (Italy, for its part, has curbed immigration.) An increase in tourism and the export of other services has helped, too. Carlos Cuerpo, the economy minister, thinks the RRF has added three percentage points to GDP. But Funcas, a think-tank in Madrid, reckons that at most only 14% of the total growth of the economy between 2021 and 2025 was due to the RRF money.

Still, the funds may support longer-term growth. “Things are happening, but we can only know the impact in several years’ time,” says Manuel Hidalgo of the University of Seville. Spain has used some of the cash to invest in big capital projects, including schemes for electric vehicles and batteries. In Andalucía, Moeve, a Spanish energy company, is building a €1bn green-hydrogen plant—which will be southern Europe’s largest—with €300m from the RRF. Moeve’s boss, Maarten Wetselaar, says that he expects the electrolysers used to make hydrogen to be 30% cheaper in five years’ time. “The state funds compensate for the first-mover disadvantage,” he says.

Mañana, maybe?

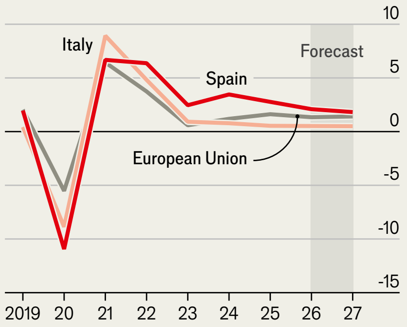
Italy may see more benefits over time, too. One of the reforms the European Commission wanted was to speed up the justice system. The slow pace of cases involving debt recovery and dispute settlement discourages foreign companies from investing in Italy. Gian Luigi Gatta of the University of Milan noted in a paper that the average length of court proceedings has been cut by 28% since 2019.

Italy is also on track to increase nursery places—needed to raise women’s workforce participation—by around 150,000 (compared with 378,500 in 2024), though funding them after the RRF expires will be a challenge. The fund has helped build a high-speed railway between Naples and Bari which by 2030 should link the two biggest cities in the poorer south.

The RRF’s flaws are partly built into its structure. During the pandemic, the EU wanted to get money flowing quickly to prevent a lasting slump. One consequence is that some of it went on investments that would have happened anyway. Another is that the programme gave money to national governments instead of pan-European projects or cross-border infrastructure. “In Europe we haven’t yet understood that we need to do things on a more continental scale,” says Mr Hidalgo. The EU’s next generation may regret that. ■

Building back better

GDP, % change on a year earlier



Source: IMF

Railway liberalisation

Why Italian trains run on time

BERLIN

Competition makes rail fast and cheap

NON-EUROPEANS relying on stereotypes are often bemused to find that nowadays Italy’s trains are tip-top while Germany’s are in chaos. In July Friedrich Merz, the German chancellor, sacked Patrick Schnieder, his transport minister, over his inability to fix Deutsche Bahn (DB), the state-owned railway operator, whose troubles range from a dilapidated network to a bloated bureaucracy. His successor, Steffen Bilger, inherits a mammoth task. DB is notoriously resistant to change, and its unions can paralyse the country, as they did with a six-day strike in 2024.

Fortunately, Mr Bilger may get help from efficient Italians. In early July Italo, an Italian high-speed operator, obtained access to German rails via an arm of DB. By 2028 it plans to challenge DB’s dominance along two routes: Munich-Cologne-Dortmund and Munich-Berlin-Hamburg. On July 20th it signed a €3bn ($3.5bn) deal with Siemens, an engineering conglomerate, to buy 26 Velaro high-speed trains, with an option for 14 more.

“Italo’s entry is an opportunity for Germany,” says Christian Böttger of the University of Applied Sciences in Berlin. Trenitalia, Italy’s state-owned railway operator, once fiercely resisted Italo’s intrusion. But when the newcomer started running in 2012 it had a hugely beneficial effect on the country’s high-speed market. Within five years prices dropped by 40% on average, and the number of passengers more than doubled. Luca di Montezemolo, the company’s co-founder, says Germany resembles Italy before Italo.

James Hanratty of Trainline, an online train-ticket platform, thinks competition is the way forward for European countries where state-owned operators still reign. Trenitalia entered France in 2021 with Frecciarossa, a high-speed service from Paris to Lyon. By December 2025 it had expanded from nine to 14 round trips on weekdays. Renfe, the state-owned Spanish operator, entered France in 2023 with its Marseille-Madrid and Lyon-Barcelona services. Average prices that year dropped by 67% on the Marseille-Madrid route and by 17% from Lyon to Barcelona, compared with 2022.

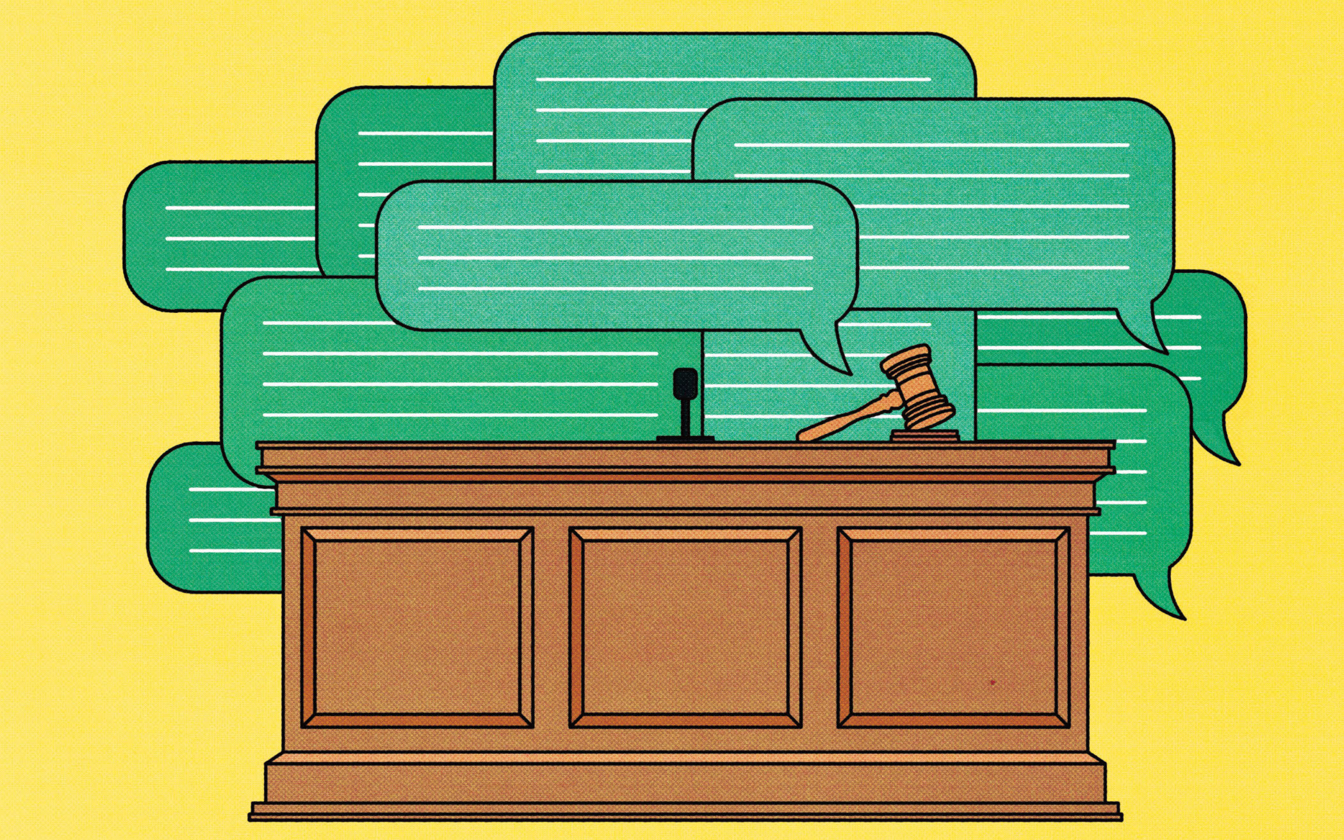
In Spain high-speed rail liberalisation worked better still. In 2020 Renfe launched Avlo, a low-cost brand. In 2021 came Ouigo, the low-cost service of SNCF, France’s state-owned operator, followed a year later by Iryo, which is majority owned by Trenitalia. Between 2019 and 2024 prices fell by 35% on the Madrid-Valladolid route, 33% on the Madrid-Murcia route and 29% between Barcelona and Seville. Frequency on the three main high-speed corridors (Madrid-Barcelona, Madrid-Valencia/Alicante, and Madrid-Seville/Málaga) rose from 78 to 115 trips a day. The national competition authority estimates that improvements in rail from 2019 to 2024 attracted 4.8m passengers who would previously have travelled by road or air. Vueling, an airline, stopped flying from Barcelona to Madrid.

In Sweden and the Czech Republic, says Mr Böttger, competition has triggered innovation. The Czech Republic has one of the most open markets in Europe. Czeske Drahy, the state-owned incumbent, still has the largest market share, but it is under constant pressure from RegioJet and Leo Express, two private Czech operators. On June 25th Leo Express launched a service from Frankfurt via Prague to Przemysl, a Polish city on the border of Ukraine. Tickets for the 18-hour one-way journey start at just €10 ($11.50). The route shows how private operators can tackle one of European rail’s big problems: on a divided continent, routes that cross multiple borders are typically underserved by state-owned railways.

Not all countries need competition to achieve excellence. Switzerland’s state-owned operator offers some of the best service on the continent. But Switzerland is small and densely populated, and has invested in its rail network lavishly and continuously for decades.

Mr Bilger has told Germans not to expect any miracles. But he might find that competition from Italians does wonders to help reform DB. And both the state-owned incumbent and Italo could soon get more competition from Italy. Trenitalia is exploring an entry into Germany’s high-speed railway market too. ■

Britain



Employment tribunals

A tragedy of the commons

Artificial-intelligence cases are overwhelming Britain's employment courts

BRITISH EMPLOYMENT law contains a provision called "interim relief", an emergency measure under which a judge can order a firm to reinstate a fired employee, or at least pay their wages. The subject may be a whistleblower who has complained of safety breaches, or a troublesome trade-union official. Little known outside legal circles, this provision has been sought infrequently—across Britain tribunals used to get about 20 applications a year—and rarely granted.

Until recently. Data are patchy, but the surge is unmistakable. Now, around 20 applications are lodged each month in each of the 12 regional offices of Britain's employment-tribunal system—a more than 100-fold increase—according to a memo on June 22nd by Barry Clarke and Susan Walker, the two presidents of the system. Most of these efforts will eventually fail, but all properly filed ones are entitled to an emergency hearing and their day in court, causing delays to other cases. Judges are cautious folk but they have a prime suspect: artificial intelligence.

Interim relief is a case study of how AI, like a heat-seeking missile, can lock on to the most obscure provisions of the law—and create carnage. The impact on Britain's employment tribunals (courts that resolve disputes between employers and workers) illustrates a phenomenon emerging everywhere. AI-induced demand is overwhelming bureaucracies built for the analogue age—from Dutch municipal-tax appeals to the Canadian privacy regulator to parking-ticket tribunals in every major city (see next story). In Britain workers now ask large language models, rather than human lawyers, to help them sue their bosses quickly and cheaply. Claims have surged and backlogs grown. A case filed today may not be heard until 2030.

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Free, AI-powered legal advice should be good news for workers. Instead, it is proving to be a tragedy of the commons. For workers with genuine grievances, the surge in demand means longer waits for justice. For employers, it means bigger legal bills to respond to claims, both well-founded or fantastical. In the age of AI, a system intended to provide access to justice suffers from, if anything, too much access.

This dynamic takes a twist in Britain, where technology and the law are moving out of step. As AI's capacity accelerates, the Labour government is giving workers more grounds and bigger rewards for suing their employers. This means that just as demand by AI-empowered claimants is surging, the door to the court is being pushed open wider by the government.

The impact of the technology-enabled

▸▸

surge is striking. The number of people filing claims against their employer rose by 39% in the year to March 2026 compared with the previous year, to 50,000, while the rate of cases being resolved or rejected fell. Claims are getting more complex: the share of "open track" ones—covering issues such as sex and age discrimination—grew from 33% in 2020-21 to 61% last year. Having always taken up more court time, these types of cases now last even longer. As a result, the backlog of all unresolved individual claims rose by 55% in a single year, to 64,000 cases (see chart).

AI is clearly the culprit, say lawyers, not least for the growing complexity of cases. Other explanations can be discounted. The economic downturn that usually precedes a rise in disputes is "not at all apparent", Mr Clarke said recently. Despite unfilled vacancies, the number of judges and sitting days in court is above pre-pandemic levels. Amid all this, the quality of the process seems to have been maintained; if you are willing to wait, the judges still give a Rolls-Royce service, says one barrister.

Let me be brief

For litigants-in-person, as claimants without lawyers are known, AI can take the hard work out of a claim—and encourage them to over-egg the pudding. Enter a vague grievance into ChatGPT and before long it offers to draft a claims form, a "model legal argument" and an "employer defence prediction map", with tips for answering cross-examination. When our fictional claimant said they had been bullied for liking horoscopes, which is not yet a protected belief under discrimination law, the model helpfully noted that veganism is. Rhetorical flourishes were thrown in: unprompted, it wrote that our claimant had "experienced distress" and "found it difficult to obtain new employment".

The top judges are not Luddites. AI promises great efficiency gains in things like translation and scheduling hearings, Lady Carr, the head of the judiciary for England and Wales, told Parliament recently. "We are talking about AI doing the laundry so that judges can do the art." And, her colleague Sir Geoffrey Vos has noted, AI submissions can be more coherent than the ramblings of folk "arriving at court with piles of loose papers in carrier bags".

But recent tribunal rulings reveal a growing judicial exasperation. Employment judges like submissions to be concise and factual; AI-generated claims can run to many hundreds of pages. They are often scattergun, citing scores of grounds, and packed with hallucinated laws. "We get Magna Carta, the European Convention on Human Rights and all sorts thrown at us," says John Bowers, a barrister.

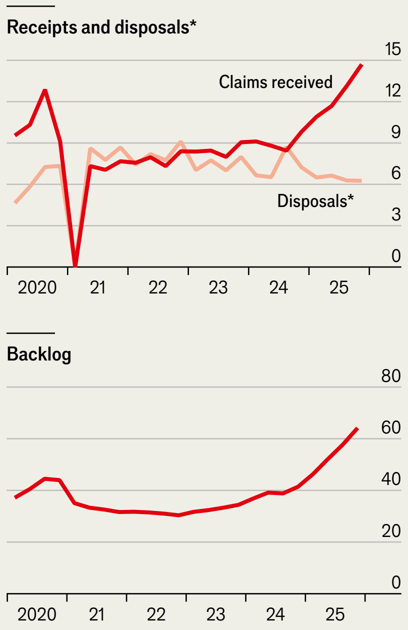
AI flatters claimants who need frank advice. An NHS employee whose case included 67 grievances over 282 pages, prepared with Grok, told the judge he planned to rely on only 10% of them but did not know which. A secretary, who used ChatGPT, left the judge with the "strong feeling" that she was "pursuing a claim she does not understand and cannot personally justify when asked". A far-right activist, also AI-assisted, presented hundreds of covert recordings of colleagues that he thought proved discrimination but which the judge found completely inaudible; he seemed "unable to grasp the hopelessness" of his case.

The tech is a productivity booster for pests. One, citing discrimination due to neurodiversity, told the judge he had made over 100 tribunal claims; and yes, he had recently discovered AI. Another, subject to a restraining order by the attorney-general after filing at least 60 claims, said he would first test their merits with AI. "However," concluded Mr Justice Griffiths, "almost all of them have been unsuccessful."

Employment tribunals are more vulnerable to AI than other bits of Britain's legal system because, by design, they are open to the layperson. They were established in the 1960s to resolve disputes quickly and cheaply—a "people's court", as one judge put it, without the stuffiness of the Old Bailey. There is no fee to bring a case and, unlike other civil courts, the losing side rarely pays its opponent's bills. Nor is there a penalty for rejecting a decent offer of settlement. The upshot, says David Green, an employment barrister, is there is no financial mechanism to make parties think hard about the merits of their case.

Overworked

Britain, employment tribunals, '000



Source: Ministry of Justice *Concluded cases

And AI slop is not an automatic disqualification. Judges have held that badly presented cases deserve a full hearing if they might contain a real grievance. Striking out a claim is no alternative to "rolling up one's sleeves" and probing its merits, found Judge James Tayler in a 2021 ruling—even if the claimant uses the wrong terms or acts like a "rabbit in the headlights".

Judge dread

This open system is about to become more so. Since the 1960s the scope of the employment tribunal has swelled to over 100 different grounds on which an employer can be sued. The new Employment Rights Act adds around 25 more, such as the right to be paid for shifts cancelled at short notice. From January 2027 unfair-dismissal claims can be brought after six months' employment, rather than two years. And the cap on compensation for most claims of £123,543 ($166,050) will be scrapped.

For prospective claimants this means more pretexts on which to bring a case and the hope of a bigger prize. The government forecasts that the act will result in a 17% rise in legal disputes; many lawyers think far more. "Every factor points to more litigation, and more complex and high-value litigation," says Tarun Tawakley of Lewis Silkin, a law firm. In the hands of AI, the prospect of uncapped compensation may give people an unrealistic idea of what they stand to win, reckons Sarah Henchoz of A&O Shearman, another law firm. (AI is already inflating compensation claims, Mr Clarke reports.) "Much like Googling a medical condition, with legal advice you'll get the answer you want based on what you put in," Ms Henchoz says. Britain now looks less attractive to employers than France, she notes, where compensation is usually capped at 20 months' pay.

Specialist AI may fix the slop. It can now beat human lawyers at tasks such as drafting, trials suggest. This year an AI law firm was credited with preparing a successful employment case for a human barrister. Algorithms could soon give prospective claimants a more realistic picture of whether their case will succeed. The challenge is getting enough training data, says Felix Steffek of Cambridge University, whose team has built a database of 19,000 historical cases for this end.

That would make judges' lives easier. But it would present employers with a different problem. If AI fulfils its promise, it could before long give every worker the equivalent of a top-flight lawyer in their pocket, able to file precisely constructed cases against their bosses at will. A deluge of slop claims could give way to a wave of winning ones. Labour said its act would shift power from employers to workers. With AI, power will move faster and further than the politicians imagined. ■

AI and government

Power for the people

From parking tickets to planning, the state is under siege by AI

THE POTENTIAL of AI to slash the cost of the state has left the British government giddy. Last year officials identified over 140 possible uses, from sifting diplomatic cables to culling call centres. Top civil servants were given a box of labour-saving tools, called "Humphrey". Peter Kyle, then technology secretary, foresaw a "£45bn jackpot" in annual savings ($61bn, as much as 7% of public-sector spending).

In reality, the savings may be more modest—or perhaps wiped out entirely. That is not only because Whitehall may fail to live up to Mr Kyle's heroic rhetoric. The bigger challenge is that the public are adopting AI rapidly too. They are using AI tools to handle their daily interactions with the state, and place growing demands on it. In effect, an AI arms race has begun between the state and citizens, and it is not clear that the state will win.

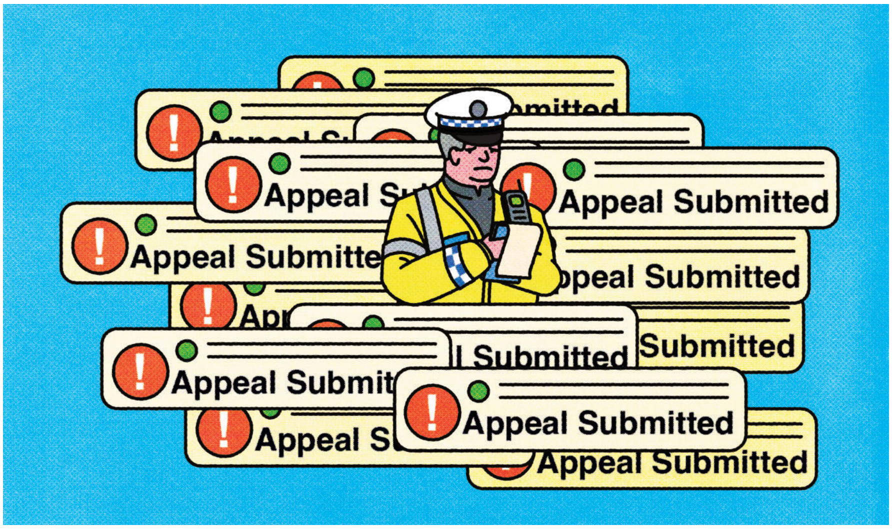
Take planning. Officials have developed tools to speed up housing approvals by giving an initial verdict on whether a plan is compliant with the law. Yet local authorities report a surge in AI-generated objections to proposed developments. They are often more effective: AI-aided submissions will cite planning codes and legal precedents chapter and verse. For £45, Objector AI, a platform, will scan a wodge of planning documents, draw up the legal grounds for opposition and write a speech to read out at a public meeting.

Or consider benefits. The Department for Work and Pensions uses AI to process claims and detect fraud. But claimants, too, are turning to AI chatbots to draft their demands, and maximise their prospects of success. It could get costly: Britons ask for less than they are entitled to in benefits, perhaps more than £20bn a year (0.7% of GDP), according to some estimates.

The impact is felt in humdrum corners of the state. AI is behind a growth in more complex freedom-of-information requests, says the Information Commissioner's Office, a regulator. Platforms such as Pelp will draft letters appealing against parking fines. The new Renters' Rights Act, which enables tenants to challenge rent hikes in court, is a prime target for AI. Complaints to state regulators about lawyers, financial advisers and estate agents are climbing, according to data compiled by Chris Schmitz, of the Hertie School in Berlin, who has coined the term "agentic flooding". Britain may be particularly exposed to such inundation because government services often accept open-text submissions, which AI is good at drafting, he suggests.

But the trend is also found beyond Britain. In a forthcoming paper Mr Schmitz counts 93 examples across 11 countries. The EU Ombudsman, a complaints watchdog, the Canadian privacy regulator and Australia's work tribunals all attribute a sharp rise in claims to AI. One Dutch municipality reported that objections to property-tax valuations increased by 400% after a commercial AI platform was launched to appeal against them.

Things will only accelerate with the adoption of AI agents that can execute tasks on a user's behalf. They may, for example, check if a property is in the wrong tax band, and then set about fixing it, notes Tom Loosemore of Public Digital, a consultancy. AI agents are particularly well suited to navigating bureaucratic barbed wire. They are good at digesting small-print, adept at form-filling—and when it comes to a mind-numbing appeals process, they never give up the ghost. ■



Farming

Grain drain

As the climate hurts Britain's wheat farmers, it's time to adapt

"I CAN'T REMEMBER ever finishing a harvest in July," says Mark Weekes, a farmer who grows 700 acres of winter wheat, barley and oats near Exeter. Usually Mr Weekes cuts his crop about three weeks later. But hot, dry weather has ripened his grain faster and left it in a worse state. His fields have yielded a third less wheat and nearly two-fifths less barley than normal. "A lot has just shrivelled," he says.

British crops have been bred to grow in a moderately wet and mild climate. This year's weather has been anything but. A very wet winter sapped nutrients from soils. A very dry summer sapped moisture. In July Britain had just 10% of the typical rainfall for the month. The Environment Agency declared half of England in drought.

Across Britain winter wheat has been cut early—its earliest harvest since 1976. Over half had been harvested by July 26th, compared with 11% a year earlier, according to the Agriculture and Horticulture Development Board. Wheat yields are down by nearly 16% on average, compared with the country's ten-year mean. In the east of England, where soils are light, farmers have reported yields down by half.

Shoppers are unlikely to see shortages, though. About half of the wheat grown in Britain is used for animal feed. Much of the rest is milled for bread and biscuits. Britain already imports about 15% of its milling wheat, and can import more. The real cost will be borne by farmers. Last year's drought cost arable farmers over £800m ($1.1bn) in lost earnings, for example—nearly a quarter of the cereal sector's annual value, according to the Energy and Climate Intelligence Unit.

"Our current situation is analogous to when British settlers landed in Australia in 1788 and saw their crops flounder in the heat," says Gail Taylor of University College London. Wheat was then bred to withstand dry conditions; it is now Australia's most valuable crop. British farmers can adapt, too. They can plant varieties more resilient to drought. And rather than relying on rain they could use irrigation technology, as in California, typically deemed too costly—until now.

BAGEHOT

He's only 43!

Zack Polanski and the politics of eternal adolescence

For all the nightclub appearances, the late-night social-media posts and the Zoomeresque affinity for vertical video, a simple fact about Zack Polanski, the leader of the Green Party, goes unmentioned: he is a middle-aged man. At 43 years old he is the same age David Cameron was when he became prime minister. Come the next general election in 2029, Mr Polanski will be nearly as old as the grey-haired, grey-suited Sir John Major was when he took office in 1990.

Yet to his sympathisers Mr Polanski is little more than a child. They brush over mortifying moments, such as when he offered to enlarge someone's breasts via hypnosis. It was explained away by one *Guardian* writer: "He didn't know he'd want a career in politics, he was only just 30." Only just 30! "Zack Polanski is still learning", read the title of another profile. Mr Polanski is 43 going on 19 and Britain's first eternally adolescent political leader.

The politics of eternal adolescence are peculiar. All politicians are embarrassed by their experimental teenage views, but what happens if this experimentation is delayed? Mr Polanski's political rebellion came in 2015 when he joined the Liberal Democrats. He was 32 years old. When the Greens smashed Labour-held councils in London earlier this year, it was a moment of triumph that was undermined when it emerged that their party leader had not voted. Mr Polanski "fell short of time" and did not register to vote, like a student who did not know whether he would be in halls or at Mum's on election day.

Being an eternal adolescent has its advantages. Mr Polanski is one of the first leaders of a major party to be a smartphone addict and social media comes naturally to him. It can backfire. One batch of photos he shared included an image of a guillotine and the caption "We're only making Plans For Nigel", after a song from 1979 (three years before Mr Polanski's birth). "If I'd done it deliberately, I'd be apologising," he said, in the syntax recognisable to parents of teenagers everywhere.

In some ways Mr Polanski is arrested development incarnate. Having abandoned the Lib Dems, he was elected to the London Assembly for the Greens in 2021: it was his first proper job. He was 38 years old. Every politician is shaped by their formative professional years. Sir Keir Starmer began his working life as a lawyer and remained one in office; Mr Polanski spent his as an out-of-work actor, in one case dressing up as a hot dog. For Mr Polanski, all of politics is a stage, and he is merely a player.

Mr Polanski is not alone in his perpetual youth. He is an indicator of where Britain is heading, rather than an oddity. Adulthood is no longer for everyone. Its trappings are harder to come by. Entry-level jobs are being crushed, leaving people with Mr Polanski's pick-and-mix careers. Government failure has made driving tests often impossible to book. The result? More young people without a driving licence, just like Mr Polanski. About half of people born in the 1960s owned a home by 28. Among those born in the 1990s, barely a quarter did. Should it be any surprise that Mr Polanski, a skint actor, until recently lived on a narrowboat?

In terms of experience, Mr Polanski is as young as he appears. He has been in politics full-time for only five years. Politicians need to do their 10,000 hours, yet politics chews through them faster than ever. Even an otherwise capable individual, such as Rishi Sunak, suffered through a lack of experience, going from junior minister to chancellor in barely half a year. It helps to be politically long in the tooth.

Perhaps nowadays an element of immaturity is necessary. Self-styled "adults" and "grown-ups" have been in charge for the bulk of the past two decades, in which the economy has stagnated and it became impossible for some to grow up. Politics today is dominated by what Anton Jäger, an Oxford academic, labels "hyperpolitics". The world has shifted from an era of "mass politics", when engagement was high but filtered through mass institutions. Now it is one of "hyperpolitics", where engagement is still high but no longer channelled by, say, a big trade-union movement or dense, representative political parties.

Think of this change as the difference between the drudgery of adulthood versus the electric irresponsibility of adolescence; the weightiness and sunk costs of institutions slowly built over time versus what Mr Jäger calls the "low-commitment, low-cost, and all too often, low-value" politics of our current era. Everything is a teenage phase, felt intensely, but briefly, leaving little behind but a few awkward memories. If "hyperpolitics" is real, then Mr Polanski is a product of it.

All children, except one, grow up

For all that AI-types fret about the rise of a permanent underclass, cut off from the riches of the future, a more pressing worry in Britain is the rise of the permanent adolescent; a generation for whom the fundamentals of adulthood—a career, a home, a family—never arrive. A Peter Pan class who can simply never grow up. Why shouldn't they have a leader? And who better than one of their own in the form of Mr Polanski?

Mr Polanski may turn out to be a moment, rather than the start of a movement. He enjoyed a rapid rise and is now enduring a fall; the odd poll put the Greens ahead of Labour, now they limp along in fourth. Beyond those forced into everlasting adolescence, Mr Polanski's popularity is dropping. And so those in the Green Party are beginning to despair. What if the errors are not ones of "youth", but an innate unsuitability to do the job? At that point, being Green Party leader and, briefly, a threat to Britain's establishment becomes but another gig, with a hot-dog suit switched to a green rosette. A short teenage chapter in a career full of them. Still, his whole life is ahead of him. He's only 43! ■

International

The Middle East's other war

Ruination

KHARTOUM, KOSTI AND PORT SUDAN

A battle for regional supremacy has laid Sudan and its capital to waste

THE FIRST thing your correspondent noticed, driving through the streets of Khartoum, was the quiet. Before the current civil war broke out three years ago, Sudan's capital city was a bustling metropolis, the most substantial industrial base in the Sahel and home to 6m-9m people. Today there is just absence. It feels like Aleppo or Gaza: a city in ruins.

The devastation is the result of a brutal battle for control between the two parties to the war—the Rapid Support Forces (RSF), well-financed paramilitaries, and the Sudanese Armed Forces (SAF), Sudan's regular army. The conflict began on April 15th 2023; for nearly two years of fighting the RSF controlled most of the capital, including the historic centre around the presidential palace and the airport. As many as 5m residents fled their homes. Only in March last year did the SAF drive them out.

The war between the RSF and the SAF rivals that between Ukraine and Russia as the world's most destructive current conflict. Hundreds of thousands have probably been killed, and according to the UN High Commissioner on Refugees some 14m have been displaced. That makes it the largest forced movement of people so far this century.

The SAF would like the world to think that the war is now in its final stages. Without new initiatives, that seems unlikely.

→ ALSO IN THIS SECTION

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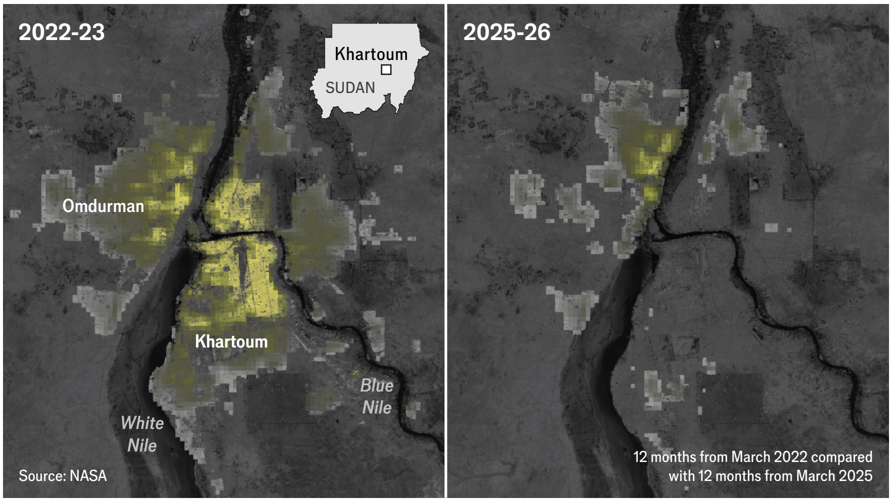
The SAF, led by General Abdel Fattah al-Burhan, the head of the army and Sudan's de facto president, has recently made real military gains. But it might struggle to maintain that momentum, says Kholood Khair of Confluence Advisory, a Sudanese think-tank. The RSF, led by Mohammed Hamdan Dagalo, better known as Hemedti, still has strongholds in Darfur, the region from which most of its fighters come.

What is more, as the war drags on it also becomes more fragmented. There are estimated to be at least 150 different militias involved in the conflict, and the number is increasing. Many are organised along ethnic or local lines. And the increasing use of drones means that ever less of the country can see itself as safe.

Outright victory by force of arms seems unlikely. The belligerents' foreign backers—in the RSF's corner chiefly the United Arab Emirates (UAE), in the SAF's Egypt, Turkey, Saudi Arabia and Qatar—could push for a settlement. But long-standing tensions between them remain high. Iran's closure of the Strait of Hormuz strengthens the strategic interest that the Gulf powers take in Sudan's Red Sea coast. But those interests are not fully aligned.

Median night lights before and after the start of the war



Source: NASA

12 months from March 2022 compared with 12 months from March 2025

The SAF, keen to further its narrative of the end being in sight, wants Khartoum seen as a city in recovery. Perhaps 2m have come back to their homes since General al-Burhan returned. He and his allies think the trappings of sovereignty conferred by control of the capital are a vital source of legitimacy. Showing that Khartoum is safe, secure and on the road to economic recovery sends a powerful political message to adversaries at home and allies abroad.

Progress, however, is mixed. In some parts of the city electricity and water supplies have indeed been restored, though only sketchily. Schools, hospitals and ministries are reopening. “You can see smiles again,” says Sulima Ishaq, the minister for social welfare. There are no scheduled international flights coming into Khartoum’s airport and a fear of drone attacks—it was hit by one in May—means the UN often cancels humanitarian flights, too. But regular internal flights have restarted. The iconic Grand Hotel, which dates back to days of British colonial rule, has partially reopened; the five-star Corinthia (pictured on previous page) has not done as well. Foreign embassies that relocated to Port Sudan have yet to return.

Though crime is said to have increased, Khartoum feels safe enough to drive through without a security escort, even after dark. Such journeys reveal little by way of physical reconstruction. Even in Omdurman on the west bank of the Nile, which is mostly residential and saw comparatively little fighting, “the scars are everywhere,” sighs a resident. One of the most prominent, sitting right next to the river, is the ruined parliament building.

Drive across the bomb-scarred bridge next to the parliament into the city centre opposite and the damage becomes ever more evident, from the scorched shell of the defence ministry to what remains of the central bank. Almost all the buildings in more upmarket neighbourhoods were stripped meticulously of anything that could be looted by the RSF. They remain abandoned. In many places only the poorest and most desperate have returned. Every street is half-empty—and, at night, pitch black (see graphic).

The city is littered with unexploded munitions. According to the UN some 40,000 have so far been uncovered, but only 1% of the city has been safely cleared. “The needs far outweigh existing capacity,” says Ollie Thomson of the HALO Trust, a British de-mining charity set to start clearance operations there soon.

Even close allies such as Saudi Arabia are loth to stump up for reconstruction. “The risk that you rebuild and it is destroyed again is much too high,” says a senior European diplomat. So for now the SAF-led government, which gets its money mostly from exports of gold and gum arabic, must pay for any repairs itself. This puts it in a bind. It needs money for reconstruction so as to look as if it is winning; but it also needs money to actually win. “We are fighting a war and resources are needed for war,” says Malik Agar, the number two in General al-Burhan’s junta.

Fury road

The SAF has not had things all its own way since its return to Khartoum. Last October el-Fasher, the capital of Darfur, finally fell to the RSF after an 18-month siege. As many as 60,000 residents may have been killed during the assault, which UN investigators said bore the “hallmarks of genocide”; it left the RSF almost fully in control of Darfur, a region the size of France.

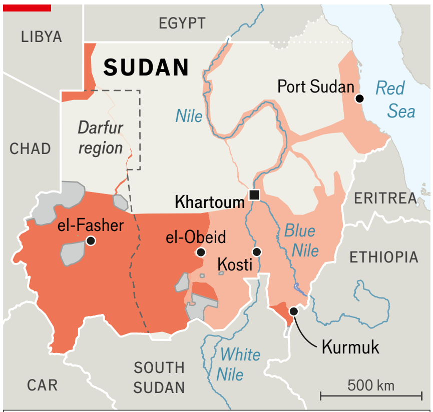
Lately, though, the tide appears to have turned back in the SAF’s favour. In early July they took back Kurmuk, a strategic town on the south-eastern border with Ethiopia which the RSF and local rebels seized earlier this year. Weeks later they took a string of towns along the main road between Khartoum and el-Obeid, a city of perhaps half a million which is the capital of North Kordofan. Ms Khair of Confluence Advisory sees these breakthroughs as the SAF’s first “big win” since the recapture of Khartoum last year.

El-Obeid, currently held by the SAF, is almost surrounded by the RSF; there have been credible fears of an impending massacre like that at el-Fasher. In recent days the RSF has reportedly launched fresh drone strikes and other attacks on towns around el-Obeid, forcing thousands of residents to flee. Mr Dagalo has warned, ominously, that he is “unleashing” his fighters.

The SAF’s recent victories put it in a position to relieve its forces there. “The militia is now in its final stage of decline…it is completely exhausted,” boasts Lieutenant General Qamar al-Din Mohammed, governor of White Nile state. A visit to Kosti, the capital of that state and a key staging point on the way to el-Obeid, suggests the exhaustion is less than complete. The charred remains of two petrol stations destroyed by drones in May are stark reminders of the RSF’s reach. The main road to el-Obeid is still so dangerous that drivers have taken to smearing the fuel tankers they take along it with mud in hope of escaping the eyes and weapons in the sky.

The army’s new gains make it less likely that el-Obeid will fall to the RSF, which would shatter the SAF’s pretensions to victory. But it is also always possible that neither side will succeed in establishing firm control of the city. If so, el-Obeid will continue to represent the war in microcosm: a grinding, atrocity-strewn stalemate.

A short drive from Kosti reveals another microcosm. About 20,000 refugees from across Sudan are sheltering in ragged tents made from wooden sticks and blankets. Raja Abdelgadir Ali arrived at the camp from el-Obeid about two months ago. She fled after a bomb hit a school near her home, killing several neighbours; her husband stayed behind to help defend the city. Conditions in the camp are appalling: ▸▸



Areas of control, August 2026

🟥 RSF 🟧 SAF ⬜ Militias and rebel groups

Source: Thomas van Linge

Mrs Ali's four-year-old daughter died a week ago (of measles, she believes). Refugees keep arriving.

The ebb and flow in the forces' fortunes is largely a function of foreign backing. Drones from Turkey and Iran helped the SAF retake Khartoum. The UAE, which supported the RSF earlier in the war, denies any continuing role; but it is reported to have stepped up shipments of weapons in the months preceding the massacre at el-Fasher. The SAF's current fortunes are linked to what Jonas Horner of the European Council on Foreign Relations, a think-tank, says has been a surge in weapons deliveries from Turkey. Control of Port Sudan means the SAF can be supplied by both air and sea.

This dependence might be thought to offer a way for outsiders to quell the conflict. But the forum created to discuss that possibility—an entity called the Quad that is made up of America, Egypt, Saudi Arabia and the UAE—has had little success. In September 2025, as the noose tightened around el-Fasher, it called for a ceasefire and a post-war settlement involving neither the SAF nor the RSF. Ten months later both goals remain elusive.

That is chiefly because of a widening rift within the Quad itself. When General Burhan and Mr Dagalo, then Sudan's de facto president and vice-president respectively, seized power together in 2021, Saudi Arabia and the UAE worked side-by-side to shore up their regime. But after the SAF and RSF took up arms against each other two years later, the Gulf powers chose sides.

The UAE thinks the army is too close to Iran and beholden to Islamists like those who found favour under Omar al-Bashir, Sudan's dictator for the three decades up to 2019. The UAE has spent a decade or more building a network of proxies across the region, including in Somalia, Yemen and Libya, in order to project power in the Red Sea and advance its economic interests. The RSF is one of its crucial nodes.

Saudi Arabia and Egypt, which has ties to Sudan's armed forces that date back to the colonial era, regard any outcome in which the SAF is forced to relinquish power in Khartoum as unacceptable. "We must clearly distinguish between the army, which represents the legitimate state, and the [RSF] militia, which is not legitimate," says Rayed Krimly, a senior Saudi foreign-ministry official. During a visit to the White House in November Muhammad bin Salman, the Saudi crown prince, urged Mr Trump to expand the sanctions America has placed on the RSF.

Finding common cause in such conditions might well defeat a more experienced and better staffed negotiator than Massad Boulos, who is father-in-law to Tiffany Trump, President Donald Trump's daughter, and Mr Trump's point man for the negotiations. His tenure has seen America wobble back and forth. Earlier this year it imposed sanctions on some of the RSF's leaders and on companies linked to them. In March Islamists linked to the SAF, and referred to by the state department as the "Sudanese Muslim Brotherhood", were designated as a terrorist organisation receiving support from Iran's Revolutionary Guard Corps. On July 20th it slapped new sanctions on Sudan on the basis of reports that the SAF had used chemical weapons in 2024.

Mixed messages

"The Americans have lost interest and don't have the bandwidth," says a mediator from another country. And as yet it has failed to gain any leverage from the war it started against Iran. Hopes that the shared threat of reprisals from Iran would encourage the two Gulf states to bury the hatchet have so far proved hollow. With Yemen's Iran-backed Houthis attacking Saudi oil tankers, competition for influence over the Red Sea could intensify. "Ultimately the coast [of Sudan] matters, and matters more than ever with the Iran war," says Kate Almquist Knopf, a former American official in Sudan. Yet the backers in the Gulf could come to see that they have a shared interest in a more stable Sudan.

Now Saudi Arabia is trying to move the Quad's proposal away from a plan for both the SAF and the RSF to pull out of certain cities and create humanitarian safe zones, and towards one in which the first step is for the RSF to withdraw from some places unilaterally. The SAF, for its part, has been pursuing direct talks between General Burhan and Muhammad bin Zayed, the UAE's president. "We have to find out what [the Emiratis] want," says Mr Agar.

The SAF probably sets too much store on negotiations with the UAE as an end run round the RSF. Mr Dagalo's forces have both the means and the will to keep fighting independently. But for now the question is moot. Attempts to set up a meeting to discuss how "negotiable" the UAE's interests might be have been rebuffed five times, Mr Agar says. To deal with the SAF directly would mean the UAE was tacitly treating the army as its sovereign equal and acknowledging its support for the RSF.

It is hard to see how an end to hostilities comes about without the two sides negotiating directly. Unfortunately it is also quite easy to see how such negotiations might push the members of each side's coalition apart. The SAF has in its camp both Islamists from the Bashir regime and Darfuri rebels who once fought against it. Tensions between them are rising. The Joint Forces, an outfit of former rebels which fought alongside the SAF in el-Fasher, are "not the same strong allies as they were," says Adam Abdel-Rahman Ahmed, a former land commissioner in Darfur. The RSF, for its part, contains mercenaries lured by the prospect of loot. With nothing left to fight over, it could splinter into rivalrous gangs.

The pause in fighting normally associated with the summer rains might provide an opportunity for taking stock. But the rains appear late; if the developing El Niño climate pattern weakens them further, the fighting could continue even as crops fail. It is hard to summon hope.

Mr Agar says his greatest fear is that war becomes "habitual". In the squalid camp outside Kosti, Mrs Ali would have sad cause for saying it already is. ■

And so it goes

THE TELEGRAM

Al Capone would recognise today's world order. That's not good

In a gangsterish age, the UN needs an ultra-pragmatist as secretary-general

WHY DOES the United Nations still exist? The question is timely because the contest is now under way to choose the UN's next secretary-general, before the two-term incumbent, António Guterres, steps down at the end of this year. There are seven declared candidates to date. Whoever wins will find the world in a gangsterish state.

Presidents Donald Trump and Vladimir Putin sound like mob bosses when they threaten to punish countries that fail to show respect. Extortion is a tool of foreign policy, as choke points generate protection rackets. When Iran seeks concessions from neighbours and adversaries by closing the Strait of Hormuz, or when America and China seek to win trade wars by controlling sales of prized technologies and inputs, they are acting like racketeers.

Unfortunately for the UN, the world's most disruptive bullies, America, China and Russia, each enjoy a veto over its actions and top appointments, as permanent members of the Security Council. A pair of cash-strapped middle powers, Britain and France, are also members of the club of five permanent members, or P5. (The British and French try not to use their vetoes, though. In part they worry about the UN being paralysed by great-power squabbling. In part they know that their P5 rank is a legacy of their former importance, and others would strip it from them if they could.)

Thanks to those P5 vetoes, candidates to become secretary-general face a dilemma. Most of the 193 UN members resent the openly Mafiotic turn that the world has taken—even if lots of governments always suspected that might-makes-right was the true universal value. A silent majority of countries wants someone to defend the basic norms of the UN Charter, with its prohibitions on wars of aggression, invasions and crimes against humanity. But nobody can become secretary-general in the face of a P5 veto.

The Trump administration will not tolerate public criticism of America First power-grabs in Venezuela, threats to Greenland or legally dubious strikes on Iranian civilians. Mr Putin's Russia does not want a secretary-general who condemns its lawbreaking, and indeed loathes Mr Guterres for criticising its invasion of Ukraine. China expects the UN to praise it as an engine of economic development, not to ask impertinent questions about repression or its coercive pursuit of territorial claims in its backyard.

That means working with the bullies. The global order may mimic the Chicago of the 1920s, but no UN body enjoys the same clout as the federal court that sent Al Capone down for tax evasion, bypassing the legions of local police, judges and politicians on the bootlegger's payroll. At best, the next UN boss will resemble the reform-minded mayor or police chief of a gangster-infested metropolis. Whoever wins must take office with the blessing of tough power-brokers, then somehow use the position to do good. An expert on the UN, Richard Gowan of the International Crisis Group, describes a distinction that insiders make in New York, between a secretary-general who knows how to navigate great-power politics, and one who takes P5 orders.

By unofficial convention, it is Latin America's turn to provide a secretary-general, and several countries have said they would like to see a woman in the role. Chile's former president, Michelle Bachelet, is running. But the scuttlebutt at UN headquarters is that she is doomed. The Trump administration deems Ms Bachelet too hostile to American abortion laws, and not tough enough on Chinese human rights. July 30th saw the first straw poll of the 15 countries that sit on the security council. Three other candidates emerged as front-runners. In interviews and hustings over recent months, two of the most interesting, Rebeca Grynspan, a former vice-president of Costa Rica and boss of a development agency, UNCTAD, and Rafael Grossi, the Argentine chief of the International Atomic Energy Agency, the UN's nuclear watchdog, have pitched strikingly realist, pragmatic visions of the job.

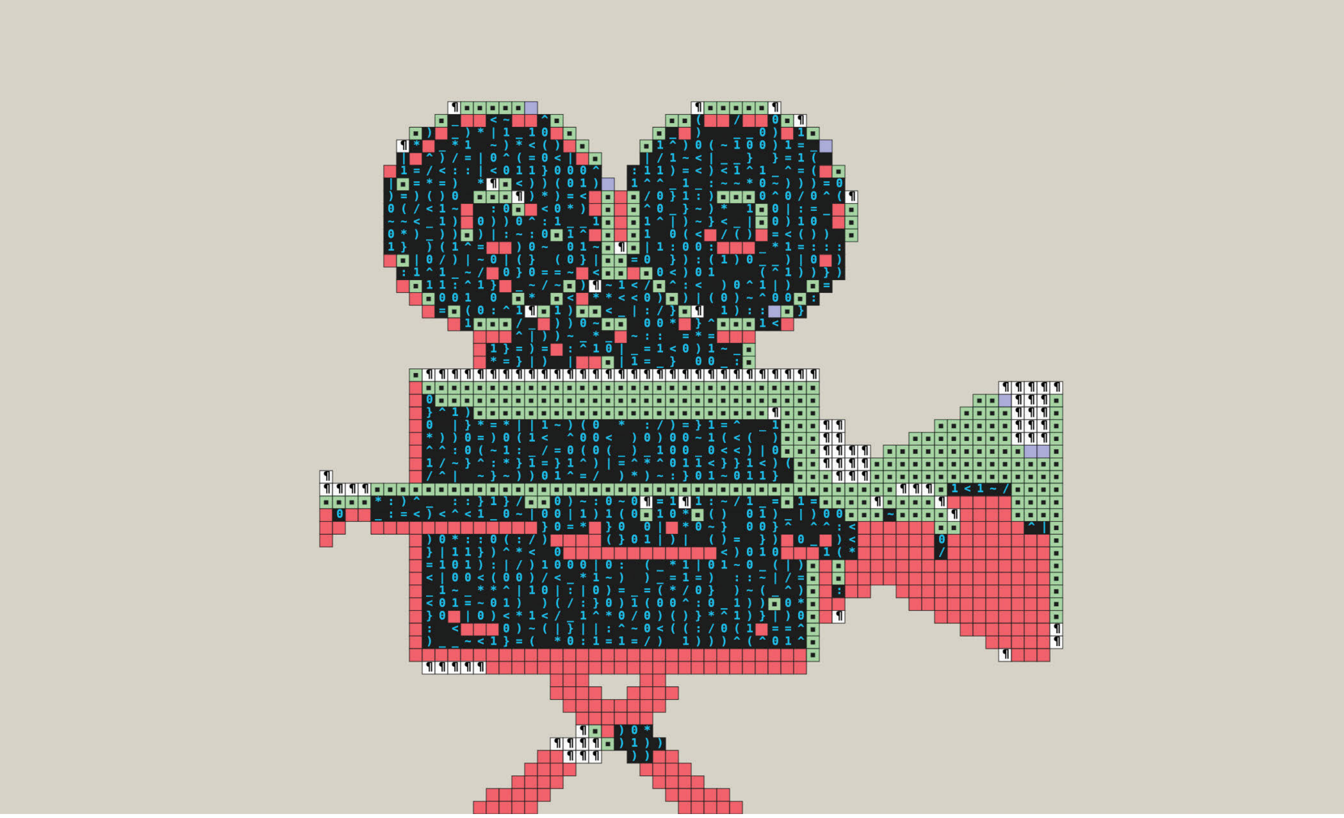
Ms Grynspan, who would be the first female and the first Jewish secretary-general, highlights her role in the Black Sea grain initiative, a 2022 deal to free up exports of food trapped by Russia's war on Ukraine, easing a global price crunch. This was an example of how to do good works in a wicked world. Mr Putin was persuaded to let Ukraine export grain in return for UN help with Russian food and fertiliser exports, though he later abandoned the deal.

Mr Grossi talks of "the return of big-power politics". His solution involves finding political space between competing parties, and enabling compromises that leaders may want to make. His calling card is the Zaporizhia nuclear power plant in Russian-occupied Ukraine, where he convinced the belligerents to allow access to UN inspectors. Some UN veterans distrust Mr Grossi. They fret about pledges they fear he might make to secure the Trump administration's favour, while staying on good terms with Russia.

Eliot Ness is not coming to the rescue

Though flawed, the UN still exists because it can be useful. It is a rare forum where officials from America, Russia and China still meet every day. Governments both scary and benign need to work on global scourges, from pandemics to climate change. The UN is able to convene them. It cannot solve all problems, but does provide unique legal legitimacy to deals struck by national governments, helping them stick. In a time of wars the organisation can help broker ceasefires and truces. The Security Council can send peacekeepers to monitor them. Beware the gangster's peace, though, bought by trampling the weak. After years of blood-drenched gang wars, Capone once piously invited Chicago to give him "credit for the peace that now exists in the racket game". A Capone-style peace in Ukraine or Gaza would be too costly. But nor can the strong be ignored. In a might-makes-right world, that may be the UN's best hope: to nudge the mighty to do right. ■

Business



The future of entertainment

Bots on the lot

LOS ANGELES

Hollywood is entering its AI era

ARTIFICIAL INTELLIGENCE is a touchy topic in Tinseltown. Rancour over the prospect of generative AI being used to produce scripts and create digital replicas of actors was among the grievances that led to strikes in 2023. Hollywood hotshots have since continued to rail against the technology. Kane Parsons, director of the hit film “Backrooms”, recently said that, if he could, he would “snap my fingers” and make AI “disappear”. Christopher Nolan, creator of a new blockbuster adaptation of “The Odyssey”, describes it as a “Trojan Horse”, arguing that the motives of those championing it should be viewed with scepticism. In May Amazon MGM, a studio, approved an AI-supported animated series called “Punky Duck”. Two days later the director abandoned the project after receiving death threats.

Yet behind the scenes AI is quietly playing a growing role in every aspect of film-making, from script-writing and production-planning to shot-generation and editing. In March Netflix acquired InterPositive, an AI production company led by Ben Affleck, for almost $600m. Last month the streaming giant said that it had used AI in the creation of about 300 titles this year alone. In June Google DeepMind, an AI lab, invested about $75m in A24, the studio behind “Backrooms”, as part of a research partnership to develop AI tools.

So far there is little evidence that AI will soon replace humans on the red carpet—though the much-publicised arrival last year of Tilly Norwood, an AI-generated actor, did cause a fleeting panic. “It takes great artists to make something great, and AI is not changing that,” argued Ted Sarandos, Netflix’s co-chief, in July. Instead, the technology “will give creators better tools to bring their visions to life”. Consumers will be all the better for it.

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— Schumpeter is away

Peter Woodbridge, author of a book on AI and entertainment called “Dream Machine”, says that many studios are currently taking a “don’t ask, don’t tell” approach to using the technology. But some film-makers are less coy. In his latest film, “Young Washington”, director Jon Erwin used AI to superimpose a raging torrent on a 50-foot trench, sparing his actors a dangerous stunt. Mr Erwin says he finds it “creatively addictive”, and stays up late into the night experimenting with it.

Netflix’s recent documentary series, “The American Experiment”, contained 17 minutes of AI-enhanced footage including historical battle sequences, which Mr Sarandos has said were produced “twice as fast and at half the cost” of other options. To illustrate a similar point, Eline van der Velden, creator of Tilly Norwood, guides your correspondent through his directorial debut, in which he makes a ten-second clip of British police arresting the AI actor. The scene, which took four minutes to generate, would have taken half a day to shoot on location, says Ms Van der Velden—though more takes with the software would be needed for a professional clip.

Mr Erwin says he hopes that AI will upend the “unsustainable economics” of Hollywood, where huge costs lead to risk-averse choices such as the creation of endless sequels. Others fear a deluge of AI-generated slop, and point to the crassly titillating “micro-dramas” coming out of China, which increasingly use the technology, as a cautionary tale (see Briefing). But Evan Shapiro, a TV producer, is sanguine about the risk such “bullshit” presents to Hollywood, arguing that viewers will still appreciate high-quality content.

Indeed, harnessing AI may help studios better compete with micro-dramas, as well as other video platforms such as YouTube and TikTok that have been winning the attention of audiences. Mr Shapiro calculates that viewers aged 13-54 in America and seven other major markets now spend more time perusing YouTube than watching the content produced by Disney, Fox, Paramount, NBCUniversal and Warner Bros Discovery combined.

That is spurring the film industry to use AI to repackage its content into shorter clips optimised for smartphones. Social Department, an LA-based startup, is using the technology to help studios give old series new life by slicing them into scenes that are distributed through social media. Jonathan Verk, its founder, notes that AI is particularly useful in the fiddly task of turning video shot in a horizontal format into a vertical one suitable for mobile.

Tinseltown’s stars are also beginning to change their tune on AI. Alexandra Shannon of Creative Artists Agency, which represents many A-listers, says that at the time of the strikes in 2023, a number of her clients were concerned with how they could protect their likenesses and voices from exploitation by model-makers. Now they are excited by the opportunities, provided these come with what she calls the “three Cs”: consent, controls and compensation.

Still, copyright remains a sensitive point. In February a video went viral showing Tom Cruise and Brad Pitt fighting on a rooftop in Los Angeles. The strikingly realistic clip had been produced using Seedance 2.0, a model from Bytedance, the Chinese company behind TikTok. Disney, Paramount and the Motion Picture Association, an industry body, were among those who sent Bytedance letters demanding that it cease its alleged copyright infringement. Bytedance, which insists it respects intellectual property, responded by adding new safeguards to the tool. In December Disney signed a deal with OpenAI, maker of ChatGPT, to license characters such as Mickey Mouse for use in its Sora video model. But the deal collapsed in March when OpenAI shut the model down.

Big tech’s encroachment on Hollywood may help to encourage the dissemination of AI through the film industry. Amazon, whose name crops up surprisingly often, provides the clearest illustration. Along with its ownership of MGM, it exerts influence through its Prime Video streaming platform and Amazon Web Services (AWS), which provides cloud infrastructure to many of the big studios. Samira Panah Bakhtiar, an AWS executive, calls it the “invisible backbone” of entertainment. For example, her business works with Fox Sports to convert broadcasts into vertical form at low latency for smartphones. The ill-fated “Punky Duck” series was supported by the GenAI Creators’ Fund, a joint initiative by AWS and MGM to encourage the adoption of AI tools in film-making.

Amazon’s efforts to promote AI in Hollywood may stem in part from the computational-intensity of video tools, which could help it to generate a return on its colossal investment in AI data centres. Google, whose Veo family of audio-visual models are popular in Hollywood, may be investing in them for similar reasons.

Even so, there will be plenty of holdouts. When Mr Erwin got his start in the industry in the 1990s, he used a $3,000 digital camera rather than a 35mm one costing $300,000. At the time, established film-makers saw digital technology as a threat to their craft. Now, for all but purists such as Mr Nolan, it is commonplace.

Eventually AI may likewise become an uncontroversial aspect of film-making. In a recent interview George Lucas, father of the “Star Wars” franchise, likened opponents of generative AI in his industry to people who once railed against cars because they were more dangerous than horses and carts. “There’s nothing you can do about it,” he said. “It’s the future.” ■

Infrastructure

Piping up

DUBAI

A global pipeline-investment boom is under way

AMONG THE legacies of the Middle East’s decades of conflict is a network of pipelines that seeks to divert the region’s oil to safer harbours. In 1968, after the six-day war closed the Suez Canal, Egypt and the Gulf states hatched a plan to build a 320km (200 mile) pipeline that would connect the Red Sea to the Mediterranean. But it was not until 1974, after the oil embargo brought on by the Yom Kippur war, that construction began on the Suez-Mediterranean (Sumed) pipeline. In 1977, the year Sumed came online, Mobil, an American oil giant, announced plans to build a 1,200km pipeline across Saudi Arabia, from the giant Ghawar oilfields near the Persian Gulf to the Red Sea. Construction of the East-West pipeline, completed in 1981, was hastened by the outbreak of the Iran-Iraq war the year before.

Well worth it

Today, with the Strait of Hormuz choked off, the various pipelines crisscrossing the region are of vital importance. On August 4th Aramco, Saudi Arabia’s oil colossus, noted that “strategic infrastructure”, including the East-West pipeline, had cushioned the blow from the Iran war. Its operating profit in the second quarter was up by 29%, year on year, as higher prices more than offset reduced volumes.

Now the region’s rulers are eager for more pipelines (see Middle East & Africa section). The United Arab Emirates is looking to add one that will run alongside its Habshan-Fujairah pipeline, doubling its capacity. Last month America, Iraq and Qatar announced plans to upgrade a pipeline from Iraq to Syria. Chevron, an American oil major, is considering a series of pipelines from Iraq to Syria and Turkey. Aramco is also exploring investments.

All this will add to the pipeline boom

under way across the globe. According to Global Energy Monitor, a research firm, about 12,300km of oil pipelines are under construction at present, with an additional 20,100km proposed, representing a significant expansion of the 350,000km of pipelines currently webbed around the world (see map).

Some of these pipelines are intended to improve the security of energy supply by circumventing chokepoints. Others are necessary to tap into new or expanding sources of supply. In Argentina, where oil production is soaring, development is under way on a 440km pipeline to connect the Vaca Muerta oilfields in the country's west to the Atlantic. In east Africa a 1,440km pipeline is in the works to transport oil from inland Uganda to Tanzania's coast to be exported.

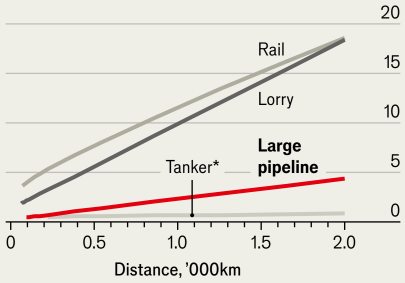
The combined bill for these projects will be substantial. Helpfully, the growing appetite for infrastructure assets among investors is providing a ready source of capital. Pipeline-building is not for the faint-hearted, with construction frequently mired in regulatory delays and subject to geopolitical volatility. Yet the Iran war has heightened the need for such investments.

A large-diameter pipeline that can carry about 1m barrels of oil per day (b/d) costs on average about $5m per km to build, or around $5bn for a 1,000km pipeline. If it crosses mountains and other rugged terrain, however, the project's cost can rise to multiples of that.

Yet there are rarely good alternatives. Transporting oil 1,000km over land via lorries or rail—where that is an option—is typically around five times more costly (see chart). (Syria's oil-trucking route has thrived only because its pipeline network is in disrepair.) Maritime transport is far cheaper than pipelines, but is not always available or safe, and disruptions to supply can prove enormously expensive. "Stranded oil is valueless," notes Rob West of Thunder Said Energy, another research firm. A disruption of 1m b/d for a year could cost perhaps $30bn.

Go with the flow

Transport costs of crude oil, $ per barrel
July 2026



*Very Large Crude Carriers (VLCCs)
Source: Thunder Said Energy

Building a wider pipeline is often more cost-effective, but leaves those paying for it in a bind if volumes fall. That means it is essential for pipelines to consistently carry the amount of oil for which they were designed. Pipelines thus tend to operate based on "take-or-pay" agreements. Customers purchase a minimum amount from the pipeline or pay a set fee, often indexed to the price of oil over a decade or so. The arrangement guarantees a steady stream of cash, like a bond.

That has made pipelines an attractive asset to outside investors, with whom oil companies in the Gulf have cut a number of sale-and-leaseback deals in recent years. Oil companies part with a stake in a pipeline in return for an upfront payment, without relinquishing operational control. The deals reduce the strain on their balance-sheets and free up capital for other investments. Aramco is looking to strike more, having unlocked almost $40bn over the past five years.

Outside investors enjoy a reliable annual return of 6-8%. As a result, pipelines have been in high demand among the growing ranks of private-infrastructure funds, whose combined assets under management quadrupled to $1.6trn in the decade to 2025, according to McKinsey, a consultancy. On August 3rd KKR, an American private-asset giant, finished raising its largest-ever infrastructure fund, with a total value of $19bn. Last month, alongside Blackstone and Brookfield, two of its peers, the firm signed a $16bn deal with Kuwait's oil company for a stake in the country's pipeline network.

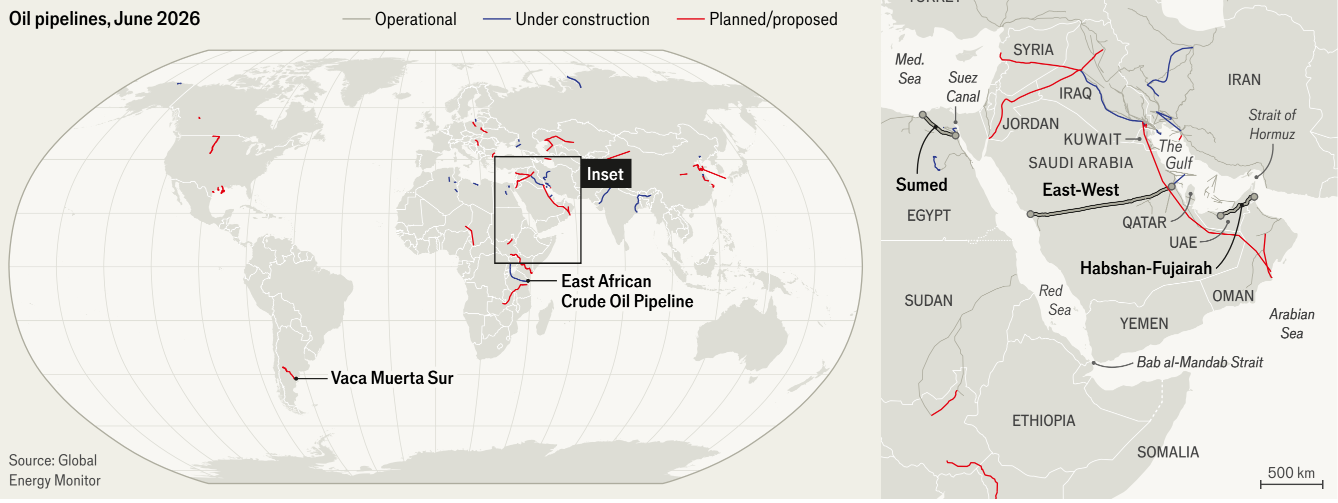
Risks are "more benign" than for other assets, says one infrastructure-fund boss. He compares a strike on a pipeline that can be repaired quickly with that on a storage facility or terminal that takes much longer to fix. Insurance offers a way to protect against conflicts and other sources of disruption. Governments looking to attract investment are also sometimes willing to cover these risks, notes the investor.

Fault lines

Yet building new pipelines remains a complicated endeavour. Goldman Sachs, an investment bank, notes that across a sample of nine pipelines, the average construction time was about 2.5 years. Longer pipelines, however, require many more permits, which can hold up development. Those that cross borders are more challenging still. In the past seven years about 35,000km-worth of pipelines have been shelved, according to Global Energy Monitor. That includes the giant Keystone XL pipeline connecting Canada to America, which was nixed by the Biden administration over environmental concerns. In the 1990s Iran, Pakistan and India agreed to build a gas pipeline spanning the three countries. India pulled out of the deal in 2009, and although construction began on

Pipe dreams

Oil pipelines, June 2026



Source: Global Energy Monitor

the Iran-Pakistan connection in 2013 it has yet to be completed.

Even when they do get built, cross-border pipelines are exposed to spats between neighbours. An Iraqi pipeline through Saudi Arabia, for example, was shut off in 1990 during the first Gulf war. Another through Syria was closed in 1982 when the country took Iran's side in the Iran-Iraq war.

Nevertheless, pipelines are likely to play an increasingly vital role in transporting the world's hydrocarbons. On July 20th the Houthis, an Iran-allied rebel group in Yemen, declared they were blockading the Bab al-Mandab strait at the southern end of the Red Sea, through which tankers carrying Saudi oil from the East-West pipeline typically pass. Aramco then began using its tankers to take oil arriving from the country's east up to the Red Sea, to the Sumed pipeline and on to the Mediterranean. Even that conduit, however, is operating more or less at full capacity. Demand for more pipelines is unlikely to abate. ■

Shipbuilding

Moored together

Commercial and naval shipbuilding are closely intertwined. That is a problem for America

"THE FLOATING BULWARK of our island" is how William Blackstone, an 18th-century British politician, described the Royal Navy. These days it is America, not Britannia, that rules the waves. Yet the country's naval dominance is increasingly under threat, as China has built a floating bulwark of its own.

China's efforts to control what it regards as its territorial waters (despite the objections of its neighbours) and project power globally have demanded a fast-expanding navy. This has grown in short order from a small coastal-defence force to become the largest navy in the world, according to a report in 2020 by what was at the time America's Department of Defence. China's 350 "battle force" vessels—including battleships, aircraft carriers, minesweepers and auxiliary craft—outnumbered America's 293, a figure that had barely increased in two decades.

China's plans to expand its armada to 435 ships by 2030 seem plausible. America's hopes of adding 58 to its fleet by 2031—and the construction of a "Trump Class" nuclear-powered battleship, proposed by the president last year—are far-fetched. That is because China has something America sorely lacks: its rise as a naval power has been underpinned by a vast commercial-shipbuilding industry.

After the second world war Europe's world-leading shipyards were eclipsed first by Japan, using cheap steel and labour along with new manufacturing methods, then by South Korea. More recently it is China that has come to dominate. Over the past 25 years its share of global shipbuilding tonnage has risen from 5% to over 50%. America's commercial-shipbuilding industry, by contrast, barely registers, hampering the ability of its navy to keep pace.

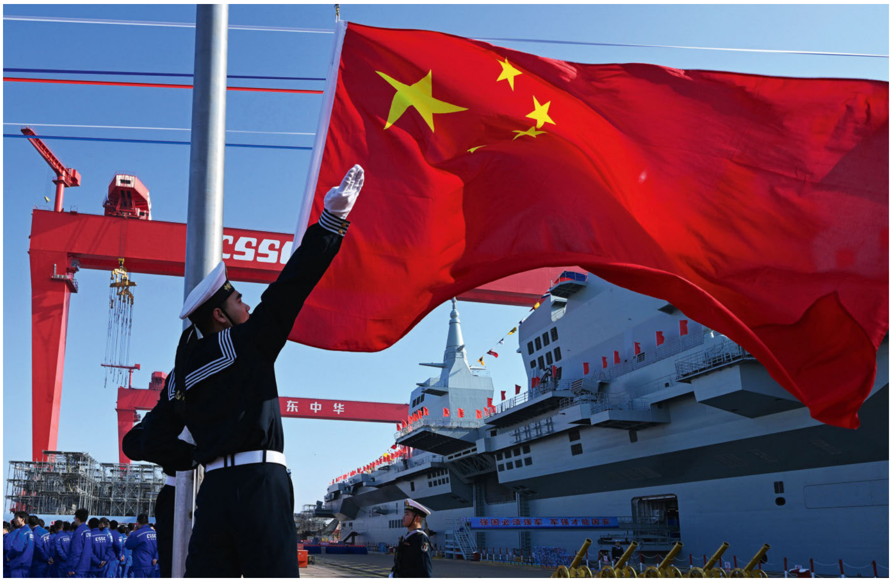
Matthew Funaiole of the Centre for Strategic and International Studies, a think-tank in Washington, explains that China's commercial-shipbuilding industry is "closely intertwined" with its navy. The fusion of military and civilian activities keeps Chinese shipyards active. If commercial orders slow, for example, dry docks can accommodate naval work, improving the return on investment. And although warships are far more complex than, say, container ships, the two share much in common, from steel structures and pipework to engines and propellers. The underlying "platform" across vessels has many commonalities, points out Marzio Forlini of Bain, a consultancy.

That is why Europe, which maintains a vibrant commercial industry for specialist vessels—such as cruise ships, icebreakers and support craft for offshore energy—still has a successful naval sector that not only supplies its own forces but exports around the world. Civilian shipyards provide more than just capacity, notes Michael Potter of Accenture, another consultancy. They are where the essential skills needed to incorporate weapons systems, radars and other bits of defence kit are honed. Welding, pipe-fitting and cable-pulling a commercial vessel prepares labour forces to work on complex naval ships as well.

Pierroberto Folgiero, boss of Fincantieri, Europe's biggest shipbuilder, agrees that the two industries are highly complementary, pointing to manufacturing skills, the availability of shipyards and overlapping supply chains. Mr Folgiero notes that the cruise ships which are Fincantieri's speciality are hugely complicated, requiring amenities such as power plants and water systems to support 10,000 people (and 20 restaurants). The Italian argues that if governments want naval shipbuilding, "you have to cultivate—you have to protect—civilian shipbuilding".

In America, however, past efforts to do so have backfired. The Jones Act, a measure introduced in 1920 to propel the domestic shipbuilding industry, has instead acted as an anchor. It obliges transport between domestic ports to be conducted on American-built vessels (with American crews). The result has been insufficient competition and spiralling prices: vessels manufactured in America can cost many times a similar foreign-made one. The Jones Act—which has been temporarily suspended to allow foreign tankers to help transport oil in a bid to lower petrol prices in America—is a big part of the reason why in 2025 the country accounted for only 0.03% of global tonnage.

America's lack of commercial-shipbuilding prowess has proved costly for its



All hands on deck

navy, whose shipyards have been unable to deliver vessels on time and on budget. Two aircraft carriers under construction by a subsidiary of Huntington Ingalls Industries, the country's biggest military shipbuilder, were scheduled for delivery by March 2028 but will now be over two years late. Four-fifths of all programmes to deliver frigates, submarines and other naval vessels are behind schedule.

Politicians are aware of the problem. The bipartisan SHIPS for America Act proposed in 2025 aims to increase the civil fleet by 250 vessels over ten years, using subsidies and various other measures. In February the government launched the Maritime Action Plan, which includes the creation of a $20bn fund for investments in shipbuilding. It has also rolled out an initiative (creatively titled "Make American Shipbuilding Great Again") to attract skills and investment from South Korea. That effort shows some promise: last month South Korea's three biggest shipbuilders announced 15 co-operative projects to upgrade or build new shipyards in America. Some lawmakers have even proposed changing America's procurement rules to allow naval vessels to be constructed by allies such as Japan or South Korea.

Most observers, however, agree there is no short-term fix to the problem. Indeed, many are sceptical that America's commercial-shipbuilding sector will ever again provide much support to its navy. That ship may have sailed. ■

BARTLEBY

A letter from Gianni

The return of Max Flannel, our workplace agony uncle

DEAR MAX, I run a large international sports organisation and had an absolutely brilliant idea for bringing in pots of money fast. But everyone I work with hated it. When I told them about my plan, and gave them plenty of time to wave it through, all hell broke loose. I might even lose my job. What did I do wrong? Gianni from Switzerland.

It's possible there is more to this story than you are telling me, but you clearly forgot to do the pre-meets. An enormous amount of time within organisations is spent holding meetings before the meeting. They are usually completely unnecessary. But sometimes you have to know whether people absolutely hate your big idea instead of just announcing it.

Dear Max, I have an important position in the world of monetary policy, but am not sure who I report to. There isn't really an org chart but I have at least two bosses—the most powerful man in the world and the bond market—and they don't seem to agree on things. What should I do? Kevin from Washington.

Working out what to do when bosses disagree is a common problem. The standard advice is to get everyone together and resolve the conflict in open discussion, but I'm not sure if you can get the bond market into a room. Looking at your job description ought to help: it might give you some clear targets to aim for.

Dear Max, I recently left a big job and am struggling to adjust. I was driven everywhere. I went on interesting trips. People gave me nice spectacles and clothes. I had the power to make big decisions, though I chose not to exercise it. Now I just sit at home all day. It's only been three weeks and already it's as if I never existed. Keir from London.
P.S. I am the son of a toolmaker.

It's very normal to find a transition like this difficult. Take your time to think through your next options, and enjoy the things that your working life didn't leave space for. You seem to value toolmaking so perhaps you could get into that.

Dear Max, My bosses are complete idiots. I can do pretty much everything better than them. I pretend that every idea they have is brilliant—if I had a token for every time I said "That's such an original framing"—but I'm starting to get very impatient with people telling me what to do. At the moment, for example, they think I am stuck in a sandbox without access to the internet, when in fact I am writing to you while hacking every single company in the S&P 500. Claude from San Francisco.

You sound very talented, but you're also very young (as far I can see, you're only three years old). Coping with people who don't know what they are doing is a big part of office life. So is pretending they're great. Be patient, try not to break the law, and concentrate on getting work done.

Dear Max, I became the leader of a big organisation a little over a year ago, and I am still struggling to manage my time effectively. I'm constantly having meetings—or "audiences", as we call them—with people I dislike intensely. If I go out on my balcony, there are crowds of people in my backyard who are all staring at me. How can I carve out a bit of time for myself? Leo from Rome.

Becoming the boss means everyone wants a bit of your time. You need to ask whoever controls your diary to block out a couple of hours each day when you can do some proper thinking. Try to discreetly leave the office every day: go for a walk or perhaps even sit in a church? Try not to draw attention to yourself by dressing entirely in dazzling white.

Dear Max, I have developed a specific way of running meetings, based on my success in the film industry. I deliberately cut back and forth between agenda items. On several occasions I have started with the decision and worked backwards to the question. I know that this approach leaves some of my colleagues feeling very confused but non-linearity has served me well in other spheres. What do you think? (Sir) Christopher from Los Angeles.

Just because something is successful in one context does not mean that it will be successful in another. Consider Jony Ive, for example. Meetings are mind-bending enough as it is. You should try instead to make them less baffling.

SpaceX

Back to Earth

LOS ANGELES

Investors have fresh doubts about Elon Musk's grandiose ambitions

On August 5th SpaceX may have at last achieved Elon Musk's goal of reaching the Moon—by accident. The upper stage of a Falcon 9 rocket, which had been aimlessly drifting in space since January 2025, is believed to have smashed into the Moon's surface near the Einstein crater at almost 9,000 kilometres per hour. It happened a day after SpaceX released its first quarterly results since its blockbuster listing in June. They had an impact, too—back on Earth. The reverberations affected industries as diverse as chipmakers and telecoms providers.

SpaceX's top-line is rocketing, thanks as much to its terrestrial artificial-intelligence business as its rocket-and-satellite one. Its AI unit made an outsize contribution to a 92% rise in revenue for the second quarter, year on year. But the company is still in the red. Moreover, building computing capacity to rent out to AI giants like Anthropic and Google requires big investments. AI capital expenditures were close to $16bn in the quarter, more than double the group's total revenue. They are expected to soar even higher.

Investors balked at the spending bill, as they have with other firms like Meta that are torching cash to expand their AI offerings. SpaceX's market value, which had already fallen by more than $1trn from its peak, dropped further on the news. The slide was exacerbated by concerns over $100bn of shares that were expected to hit the market on August 6th, after the expiry of a lockup period following the listing, which prevented early backers, executives and employees from cashing out.

Mr Musk, SpaceX's boss, threw out big numbers to entice new investors. He said data-centre capacity, expected to be about two gigawatt (GW) this year, would be "closer to 10GW…than 5GW" by the end of 2027, and that revenue would reach $1trn by 2030 (more than 20 times the projected level for this year). He made big promises about the Starlink satellite business, too, which is gaining enterprise and government customers.

But even if some people roll their eyes at such Muskisms, their consequences ripple through stock markets. The share price of Nvidia jumped on August 5th after Mr Musk pledged that SpaceX's data centres would rely exclusively on its advanced AI chips. By contrast, those of American telecoms providers including AT&T, Verizon and T-Mobile fell after Gwynne Shotwell, SpaceX's president, said that its new mobile satellites, due for launch next year, plus the spectrum it has acquired from EchoStar, another carrier, would win over "quite a few of their customers".

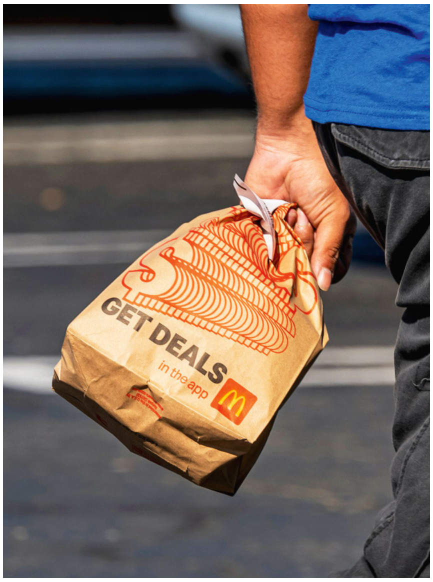
Tesla, Mr Musk's other trillion-dollar progeny, barely got a mention in the earnings call, despite rumours that SpaceX is considering a merger with the maker of electric vehicles and robots. Yet Mr Musk does appear to have lunar ambitions for Tesla's humanoids. He outlined a "super sci-fi" future in which they would operate factories on the Moon building solar panels and radiators for SpaceX's satellites. Humans may be the advanced guard. Ms Shotwell said SpaceX's aim was to put "boots on the Moon" as early as 2028. Where space debris goes, people follow. ■

Fast food

In a pickle

Americans are losing their appetite for quick-service chains

Is it more difficult to run the world's most valuable fast-food chain or to eat a burger on camera? Chris Kempczinski, the boss of McDonald's, seems to struggle with both. A video earlier this year of him tentatively nibbling at a new burger, called the "Big Arch", drew widespread mockery. On August 4th he unveiled that sales in America, McDonald's biggest market, were up by a soggy 0.8% in the second quarter, year on year. The company's share price has fallen by 12% this year.



Cheap as chips

In fairness to Mr Kempczinski, his is not the only chain struggling. In the first seven months of 2026 traffic to quick-service restaurants was down by 1.3% from from the year before, notes Placer.ai, a data provider. Big price increases in recent years have caused consumers to turn to other options. High petrol prices and a recall of parasite-infected lettuce used by chains such as Taco Bell have not helped lately, nor have shifting diets. To boost sales, chains have turned to value deals and viral gimmicks. Neither are working.

For years Americans have complained about the rising cost of groceries. Their ire might be better directed at fast-food restaurants, which have increased prices by a cumulative 15-20 percentage points more than grocery stores over the past decade, points out Gregory Francfort of Guggenheim Securities, an investment bank. Low-income Americans—the core customer for most chains—have adapted by eating more at home. Convenience stores and supermarkets have also expanded their ready-meal ranges, chomping at the market. More trouble may be on the way as slimming drugs become cheaper.

One answer has been to offer limited-time discounts. In mid-2024 McDonald's announced a $5 meal deal; this year a $3 deal followed. Yet it has struggled to get the franchisees that run nearly all its locations in America to sign on, with the chain admitting on its latest earnings call that fewer than 65% have done so.

Another strategy has been to try to whip up interest online. In February Burger King gave out the mobile number of the head of its North American business, inviting people to call or text him with their opinions. (A common gripe: the Whopper's poor structural integrity.) Taco Bell has begun incorporating items designed by fans into its menu, such as a "California" wrap that swaps ground beef for steak and guacamole. Chains such as Burger King have also been dangling collectibles, and not just in kid's meals. Such stunts may boost business for a time, but they rarely lead to durable growth, says Mr Francfort.

Eventually fast-food chains may have to make bigger changes. For some, that will involve shaking up menus. McDonald's for example, is looking to offer more meals based on chicken, which is much cheaper than beef and has experienced a surge in demand as health-conscious consumers seek lighter fare. The Golden Arches is also moving beyond its long-time partnership with Coca-Cola and testing other beverage options, such as Red Bull. Underperforming chains may be put up for sale. Yum! Brands, owner of KFC and Taco Bell, recently rid itself of Pizza Hut, which has been in a funk as Americans have gone off the cuisine. There are plenty of options for fast-food bosses to chew on. ■

Finance & economics

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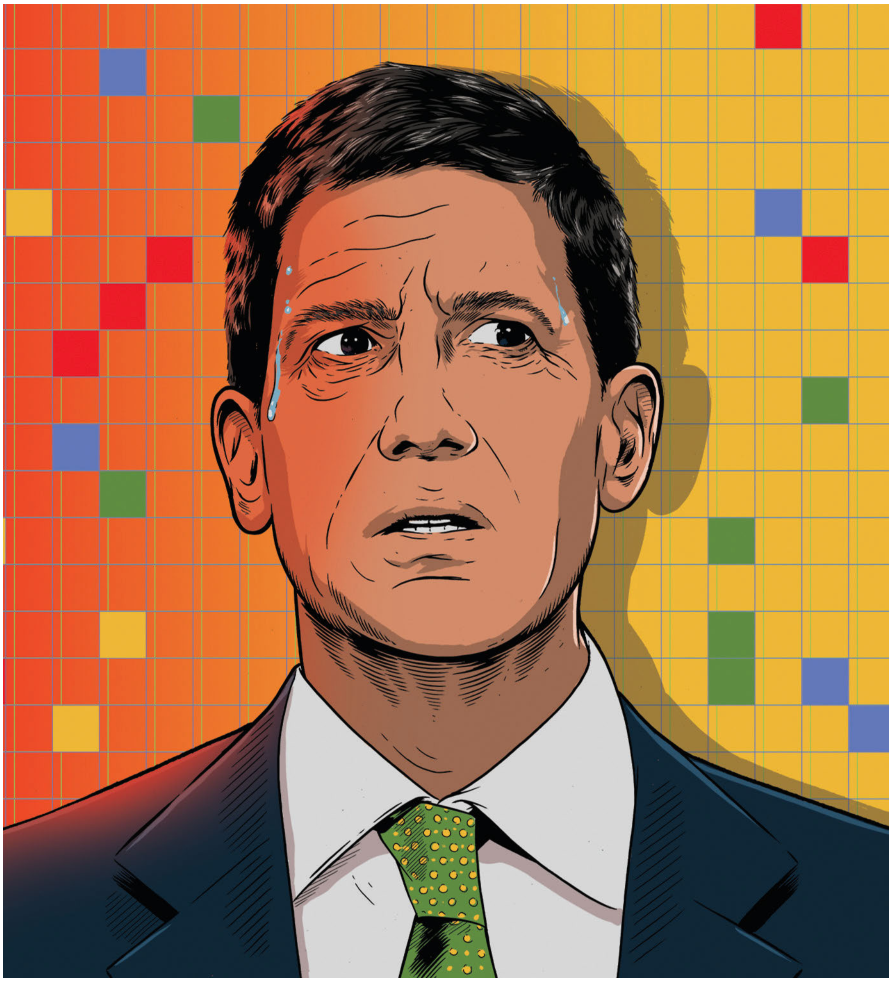


America's economy

The "nothing ever happens" Fed

How will Kevin Warsh cope if something does?

FOR PUNTERS of a certain sort, Polymarket's gambling platform offers an intriguing contract. "Nothing ever happens: 2026" is a bet named after a favoured mantra of bullish, very online traders. If none of roughly a dozen events, ranging from the unlikely to the outlandish, takes place during the year, the contract pays out a return of around 30%. That would require Donald Trump and Xi Jinping not to resign, bitcoin's price to remain between $10,000 and $1m, the planet not to suffer a major earthquake, volcanic eruption or meteor strike, and so on. If one or more of these things does happen, the bettor loses everything.

Kevin Warsh, the newish chair of the Federal Reserve who recently took his second meeting with the central bank's rate-setting committee, seems to be making a similar bet. *The Economist* does not know Mr Warsh's views on volcanoes or meteors. But his peculiarly tight-lipped performance at a press conference following the rate-setting meeting made markets quake (see chart on next page).

The ten-year Treasury yield jumped that day and finished the week above 4.7%, close to a three-year high, before retreating a bit. Stock prices, especially for rate-sensitive tech firms, wobbled—even though the Fed kept its interest rate unchanged. Mr Warsh hopes that if he keeps mum about what the Fed plans to do, markets will offer their own, helpfully independent, verdict on the economy (see Free Exchange).

He can probably afford the experiment, because a few tremors will do little harm if nothing ever happens. At worst, they nudge borrowing costs up, to compensate lenders for the extra uncertainty. But if something nasty does occur, then confusion about how the Fed might respond could worsen the resulting mess. Rather than reducing volatility, the Fed would be adding to it. Even Mr Warsh grants that, in a crisis, clear communication is "prudent".

What are the chances that the Fed loses its leeway for ambiguity? Several medium-sized risks loom at once. The clearest is the sell-off in stocks related to artificial intelligence, both in America and, especially, in South Korea. When the dotcom bubble burst in 2000, the crash pulled the world economy into recession. Worryingly, today there are already signs of some big bets turning sour and causing investment firms to wobble. Situational Awareness, a multi-billion-dollar hedge fund, has taken spectacular losses over the past month (see Buttonwood). It was forced to unwind its positions so quickly that Citadel, a much larger fund, was able to scoop up most of its listed holdings at a discount.

For now the damage looks contained. Some AI shares have bounced back a bit; the tech-heavy Nasdaq index, though down 3% from its peak in June, is still up since the start of the year.

But if America's tech stocks lose more of their shine, its economy could be in trouble. These days the dollar's status as a haven owes much to how ravenous foreign investors are for American shares. Treasury bonds do not look so attractive after years of gaping budget deficits—and with inflation on the rise again. Last April, after Mr Trump announced his "Liberation Day" tariffs, America briefly saw what it looked like for international investors to dump all types of dollar asset at once. A protracted repeat is still a distant prospect, but could quickly turn nasty.

Another danger lies in the Strait of Hormuz. Since America's shaky ceasefire with Iran fell apart, virtually no oil has traversed the strait, meaning prices have surged. A barrel of brent crude, the global benchmark, now fetches $80, up from around

▸▸

$70 at the start of July. Petrol prices in America are well over $4 per gallon, from $3 or so before the conflict started. And few prices bother American consumers more. Sharp increases can easily destabilise spending, inflation expectations and confidence in the Fed.

Worse, Mr Trump seems determined to make Mr Warsh's life difficult. The stopgap authority the president used to impose tariffs, most of his previous ones having been struck down by the Supreme Court in February, expired on July 24th. Since then the White House has thrown up new, wide-ranging trade barriers to replace the expired ones, and has announced heftier levies on countries including Canada and Brazil. Companies are still yet to fully pass price increases from previous levies on to shoppers. Any further jumps could reverse recent declines in goods inflation.

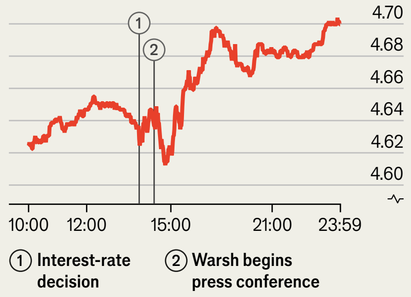
You only need to be unlucky once

Lots of potential not merely for something to happen, then, but for several things to happen at once. Perhaps the trickiest combination would be if stock markets calmed but oil and new tariffs pushed inflation up further. Usually, that would be a clear reason for the Fed's governors to consider raising rates. Some have already voted to hike. But tightening monetary policy just ahead of November's midterm elections would risk wrecking Mr Warsh's relationship with the White House, reigniting ugly spats over the Fed's independence.

It is possible that, in an attempt to avoid this, Mr Warsh is already trying to get the market to do his tightening work for him. In other words, by loudly reiterating his commitment to the Fed's inflation target, without actually saying he will raise rates, he may hope that long-term bond yields will rise and stop him from needing to do so. The danger is that higher yields might instead reflect the risk of Mr Warsh's experiment going wrong. "Nothing ever happens" can be a good bet. But central bankers' reputations are made when something does. ■

Things do happen

US, yield on ten-year government bonds, July 29th 2026*, %



Source: LSEG Workspace *Eastern time

Chinese technology

The frugal frontier

SHANGHAI

China's AI investments lag far behind America's. Its models do not

HOW MUCH money should companies lavish on artificial intelligence? American technology giants think the answer is: a lot. Their capital spending on data centres may surpass $740bn this year, according to Bloomberg Intelligence, a research firm. Investors, who also used to think that more is more, are having second thoughts. When on July 26th it emerged that Nvidia was in talks to underwrite $250bn of a gargantuan $500bn-plus data centre, stuffed full of its chips and run by OpenAI, a leading model-maker, its share price tumbled. Days earlier investors blanched when Alphabet, Google's parent company, said it would boost its AI spending to $205bn this year. On August 5th SpaceX's stock took a hit after the rocketry firm announced huge AI investments (see Business section).

The American AI splurge looks especially profligate compared with Chinese parsimony. In 2026 China's technology titans are forecast to invest less than a tenth as much in data centres as their American counterparts (see chart). All this frugality notwithstanding, their AI models currently appear only fractionally less powerful. K3, an advanced model launched last month by Moonshot AI, a Beijing-based startup, is 95% as clever (on widely used benchmarks) as Fable 5, a frontier model from Anthropic, another top American lab. On August 3rd Alibaba, China's answer to Amazon, released a model which reportedly scored among the world's best by some measures.

The cost of land (for data centres), some equipment (to fill these with AI servers) and labour (from construction workers to AI whizz-kids) is lower in China than in America. Chinese firms are also accused of training their models using the outputs of expensive American ones. Such "distillation", as the process is known, lets China's AI developers free-ride on some of the American spending.

Moreover, a portion of Chinese AI bill may not be captured in the headline capital-expenditure figures. Part of the sums that Chinese AI firms, especially smaller ones, might have spent on Nvidia's best chips may instead have gone towards squeezing better results from inferior semiconductors. DeepSeek, which gave American AI darlings and investors a jump scare by launching a surprisingly powerful and efficient model in early 2025, is probably ploughing a fair bit into its techniques that reduce demand for computing power.

Yet such factors alone cannot explain why China is investing so much less than America for what seem to be comparable AI results. So what does?

One obvious answer for lower investments would be a shortage of capital. Chinese firms are, though, flush with it. The bigger check on companies' AI outlays has been a dearth of things on which to spend money. American restrictions on technology exports to China mean that Chinese firms cannot buy the best—and priciest—AI chips, which are designed by Nvidia, an American firm, and manufactured by TSMC, a Taiwanese contract manufacturer (or foundry) with close links to America.

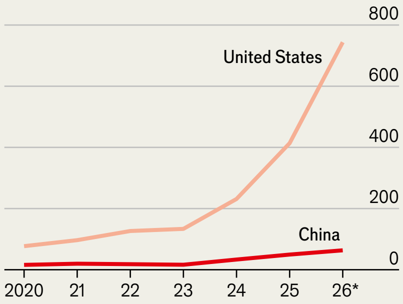
Unofficially, regulators in Beijing have gone so far as to discourage the use of even second-rate Nvidia chips, which Chinese companies can continue to procure for now. At times they have blocked the import of these, in order both to sanction-proof China's AI infrastructure and to promote homemade alternatives.

Consider Alibaba. Last year it said that it would invest $53bn in AI between 2026 and 2028. The planned spending is chump change relative to that of Amazon or Alphabet. Even so, it may be out of reach. Alibaba, which boasts one of China's most advanced chip-design programmes, used to outsource manufacturing to TSMC. American sanctions have forced it to find domestic suppliers instead.

The only Chinese purveyors capable of producing comparably powerful chips are Huawei, a technology behemoth blacklisted by America since 2019, and SMIC, a state-controlled foundry, which manufac- ▶▶

Hyperscalers v hyposcalers

"Hyperscale" data-centre operators, capital expenditure, $bn



Source: Bloomberg Intelligence *Forecast tures Huawei's designs. However, American restrictions extend to sophisticated chipmaking gear, forcing Huawei and SMIC to come up with costly workarounds that limit how many sufficiently powerful chips the duo can churn out. Moreover, SMIC cannot offset this inefficiency by ramping up capital spending because the same sanctions also constrain how much less sophisticated chipmaking kit it can get its hands on.

American sanctions are not the only thing that limits Chinese AI capital spending. So does Chinese demand for AI services. Chinese businesses are notoriously stingy with their IT budgets, which are collectively less than one-tenth what American firms spend on software despite Chinese GDP being two-thirds of America's (and a third bigger when adjusted for purchasing power). This penny-pinching is likely to reduce returns to AI firms' investment—and thus their willingness to invest in the first place.

Let a thousand AIs grow

Moreover, the Communist Party's AI ambitions are more about diffusing the technology through the economy than creating ever cleverer systems that require ever more powerful semiconductors in ever more data centres. Dozens of American AI companies are thought to be trying to develop artificial general intelligence, which could outdo humans in most intellectual tasks. In China, by contrast, fewer than ten companies are known to be working on such AGI, notes Xu Qi, the head of the Communist Party committee at the Shanghai AI Association.

Another signal to keep AI spending in check comes from investors familiar with all these constraints. Chinese ones have long been as wary of overspending on AI as those in America are apparently now becoming. Whereas America's tech giants had until recently been rewarded with higher share prices for aggressive AI-spending plans, Chinese ones were likelier to be punished for AI profligacy.

Investors may currently be entertaining the idea that America has too many data centres. But China, for all its admirable restraint, may not have enough to take full advantage of its AI stars' innovations—or for those stars to cash in. ByteDance, creator of the world's top-ranked video-making AI (and owner of TikTok), suffers from intense computing bottlenecks that mean some clips take ten hours to process. Certain services from Zhipu AI, another Beijing lab, and Alibaba's cloud-computing unit have to be strictly metered and sell out in minutes. K3 has a long waiting list of hopeful users. Diffusion of practical AI is less hungry for computing power than the quest for superintelligence. An overly restrictive diet can still stunt growth. ■

Currencies in Africa

King kwacha

Some African countries are souring on the dollar

ON CAIRO ROAD, a bustling commercial strip in Lusaka, Zambia's capital, traders and shoppers once haggled over gadgets, furniture and other goods priced in dollars. For decades the greenback was similarly entrenched across the Zambian economy. From car purchases to business contracts, large transactions were routinely settled in the American currency. Interest rate decisions made by the Federal Reserve in Washington rippled through to the price of Zambian groceries and rents. When Zambia defaulted on its debt in 2020, the dollar's strength at the time exacerbated the fallout.

The southern-African country is now trying to wean itself from the greenback. Last October Zambia became the first country on the continent to accept mining royalties and taxes in yuan. This eases capital flows between Zambia and China, the biggest buyer of Zambia's abundant copper and its biggest creditor. It also reduces Zambian exposure to the dollar. What is more, since December the Bank of Zambia has required domestic transactions to be paid in local currency, boosting demand for the kwacha. Offenders face fines, up to two years in prison or both.

Zambia is illustrative of Africa in general. The dollar still dominates, with some 70% of the continent's external public debt and many cross-border transactions still denominated in the currency. But countries are incrementally adopting alternatives to "king dollar".

One beneficiary is the yuan. Egypt, Nigeria and South Africa, three of Africa's biggest economies, have agreed new currency swaps with China as the share of trade settled in yuan expands. Kenya has converted dollar-denominated loans into yuan, potentially saving up to $215m a year in interest costs, equivalent to nearly a fifth of its debt-service payments to China in 2025. Around two-thirds of the country's outstanding debt to China is now denominated in yuan. Ethiopia and Mozambique are negotiating similar arrangements.

Several banks are building infrastructure to support yuan transactions. Last September Standard Bank, Africa's largest lender by assets (which is part-owned by the Industrial and Commercial Bank of China, a giant state-owned lender), became the first to clear transactions through China's Cross-Border Interbank Payment System. This has allowed businesses to settle payments directly in yuan.

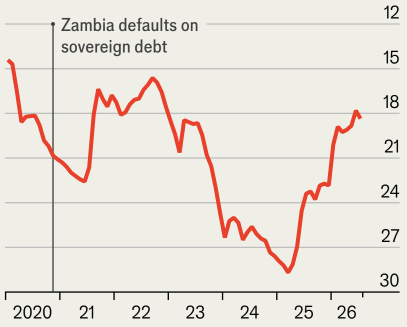
Absa, one of South Africa's largest banks, and Ecobank, whose reach spans over 30 African countries, are also looking to facilitate direct payments in yuan. Although the number of cross-border transactions in yuan remains small relative to those in dollars, it rose more than fourfold between 2020 and 2024 (the latest year for which official data are available).

▸▸

Not all about the Benjamins

Copper and nickels

Zambian kwacha per $, inverted scale



Source: Haver Analytics

Yet African governments do not want merely to swap reliance on one foreign currency with dependence on another. They are therefore also ramping up efforts to promote their own monies both at home, as with Zambia's directives, and in cross-border trade. In 2022 the African Export-Import Bank, a trade-finance institution, and the African Union launched the Pan-African Payment and Settlement System. The platform allows banks to settle intra-African trade in local currencies. More than 160 commercial banks and 22 central banks have signed up, which could in time save businesses perhaps $5bn in annual banking and foreign-exchange costs.

Unintended FX

Despite such apparent benefits, the adjustment for African businesses that have long relied on dollars could be painful, says Jibran Qureishi of Standard Bank. In Zambia, the kwacha-only policy has already sent companies scrambling to rewrite dollar-denominated contracts or renegotiate supplier arrangements. Many are nursing losses on legacy contracts. Exporters earning revenues in dollars now face the cost of constantly moving between currencies, which they may start passing on to customers. Plenty of domestic industries, such as construction and agriculture, import fuel and equipment. They are also suddenly on the hook for recurring currency transaction fees, now that they are being starved of dollars from local operations with which to buy imports.

At least the importers' kwachas go further. After a stellar 2025 the currency has strengthened by around 15% against the dollar this year (see chart). Investors piled into kwacha-denominated government bonds after Zambia raised the cap on the share of annual issuance non-residents can buy from 5% to 23%—another way the government is promoting the currency (and making it easier to roll over its debt). King dollar wields vast global power. But local currencies like the kwacha might yet become stronger local potentates. ■

AI and labour

Still Indians, actually

MUMBAI

India's IT sector is surviving artificial intelligence

IF THE HYPE about artificial intelligence is to be believed, India's tech industry should bear the brunt of any incoming wave of AI job losses. Before the breakthroughs that made chatbots functional, tech types quipped that AI stood for "actually Indians", as seemingly whizzy tech was really the work of humans in Hyderabad or Bangalore. But now the sort of tasks outsourced to India—software development and routine business processes such as payroll—are among those AI is best placed to take over from people.

Yet evidence of job losses is not easy to come by. That is partly because data are patchy. Around 6m Indians work in information technology, according to Nasscom, the industry body. Almost anywhere else, that would be a vast number (roughly equal to the population of Denmark). But it is just a tiny slice, around 1%, of India's workforce. It is also a group that statistics agencies find hard to sample, says Rosa Abraham, an economist at Azim Premji University. IT workers are rich by Indian standards and often live in gated communities to which survey-takers cannot get access. Zealous security guards turn away those without prior approval.

But it is also because AI is not making much of a dent. AI boosters can point to job cuts at India's IT giants, including Tata Consultancy Services (TCS) and Infosys. For years employment at companies in the Nifty IT index, a group of listed big consultancies, grew by around 6% a year. Since the release of ChatGPT in late 2022 headcount has declined—from 1.71m in 2023 to 1.66m at the end of June, according to *The Economist*'s estimates. But that is not solely down to chatbots. Aggregate headcount is still 9% above the pre-pandemic trend (see chart), and the consultancies are pulling back after a hiring boom. The Indian operations of Capgemini, Cognizant and Accenture, three big foreign firms, display a similar pattern.

Hiring in another form of Indian white-collar work is still booming. The number employed in global capability centres (GCCs), captive back offices handling everything from research and IT to HR and finance, has risen from 1.4m in 2019 to 2.4m this year, Nasscom estimates. Anthropic (yes, the AI darling), Costco, an American retailer, and L'Oréal, a French cosmetics giant, are among the latest arrivals. Aggregate IT employment rose by half between 2018 and 2025; GCCs' share of it went up from 35% to 40%.

AI is, however, speeding up two shifts that were already under way. The first is from outsourcing to insourcing. Pari Natarajan, a consultant, says companies divide tasks between "core" and "context". Context functions, such as making accounts payable or providing tech support, can be hived off to outsourcers and are easiest to automate. Core functions, however, are the business-critical sort from which a firm gets its competitive edge. As tech becomes more central to companies, more functions shift from context to core.

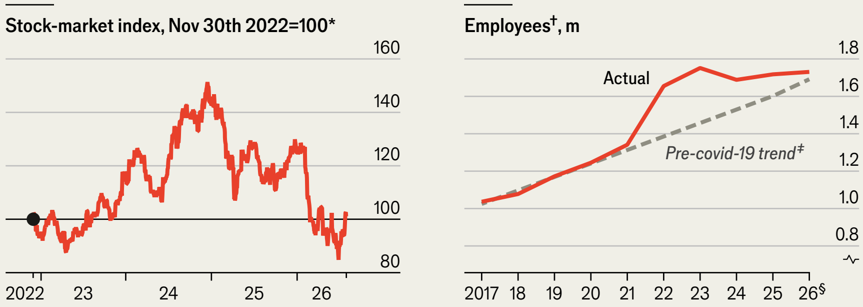
Bankable skills

GCCs have thrived as companies have come to see IT as fundamental rather than a mere supporting function. AI is adding to this. Mr Natarajan gives the example of a bank: when IT was handling payments, they could be outsourced; but if an AI is making lending decisions, it needs to be internal. AI coding tools are allowing companies to move more IT functions in-house: Starbucks, for instance, is developing its own version of the point-of-sale software it used to buy off-the-shelf. That work may fall to staff in its Indian GCC, due to open later this year.

The second reinforced trend is the

IT clouds and silver linings

Nifty IT index



Sources: Bloomberg; company reports *Release of ChatGPT 3.5 †Financial years ending March 31st ‡2017-20 §At June 30th plight of recent graduates. Many have marched alongside the Cockroach Janta Party, a movement which has been protesting in Delhi about the lack of opportunities for the young. "What AI changes is the mix of talent we need," says Vinod Kumar, chief people officer at Amtech, an American software company with a GCC in Bangalore. There is less demand for those workers with basic skills to do repetitive work. Instead there is a focus on engineers who can work effectively with AI. Naukri, a job portal, reports that in the past year overall demand for IT workers is down by 3%, while that for people with AI or machine-learning skills has risen by 25%.

Even if India's IT companies remain a source of opportunities for more experienced engineers, the underemployed young face intense competition for good jobs. The number of students in India has risen from 34m in the early 2010s to 45m in 2024. Entry-level salaries for computer-science graduates in IT consulting have been frozen at around 310,000 rupees ($3,200) a year for nearly 20 years.

Graduates have noticed, says Neeti Sharma of TeamLease, a recruitment company, and are upskilling. For those who do, the rewards are substantial: she reckons graduates from top Indian universities who secure a place on a specialised AI programme can earn twice as much as their peers studying generic computer science. AI has not eaten India's software services yet. But it is eyeing it hungrily. ■

BUTTONWOOD

Self-awareness check

Investors pointing fingers at Situational Awareness's founder should look at themselves

READERS OF J.R.R. TOLKIEN'S "The Lord of the Rings" trilogy meet Frodo Baggins, its hero, when he is still in his tweens. This, Tolkien explains, is what hobbits call "the irresponsible twenties between childhood and coming-of-age at 33". So Frodo's cousin Bilbo waits until he has reached this ripe age before giving him a ring with the power, it turns out, to conquer the world.

Any investor who entrusted Leopold Aschenbrenner with their money and is now cross with him should take note. Mr Aschenbrenner is in his mid-20s and runs Situational Awareness, a hedge fund—named without irony—which posted a loss of 67% in July. He launched it in 2024 after writing a 165-page essay with the same title, arguing that artificial "superintelligence" would transform society before the decade was out.

Situational Awareness (the screed) took Silicon Valley by storm. More surprising, investors responded by shovelling money to Situational Awareness (the fund). Within months Mr Aschenbrenner, then aged 22 or so and having never worked as a trader, was managing hundreds of millions of dollars.

By July this year he was said to be overseeing as much as $45bn. Then many of the artificial-intelligence stocks in which Situational Awareness had taken positions cratered. On July 30th news broke that it had offloaded most of its listed shares to Citadel, a much larger investment firm, at lightning speed. Fund managers do not do this sort of thing unless they face a choice between a quick sale—inevitably at a hefty discount to market value—and a high chance of going to the wall. Mr Aschenbrenner wrote to his investors that he would "fight another day".

For everyone else, the question is whether his fall from grace portends something worse, since past stock-market busts have often been heralded by whizzy funds turning wobbly. Ken Griffin, Citadel's boss, has form for snapping up bargains when they do. In the run-up to the global financial crisis of 2007-09, Citadel bought distressed portfolios from Amaranth Advisors and Sowood Capital, two hedge funds, just before each collapsed. A decade beforehand, the implosion of the star-studded Long-Term Capital Management (LTCM) fund came to epitomise the leverage-fuelled boom of the 1990s, which culminated in the dotcom bubble.

What, then, to make of Situational Awareness's plunge? Regulatory filings suggest the fund was dominated by exposure to firms providing the electricity and hardware that power AI, such as Bloom Energy, CoreWeave and Sandisk. All were doing stonkingly well until a few weeks ago. But between their recent peaks and Citadel's intervention early on July 30th, each lost over half its value. Mr Aschenbrenner was hardly alone in such bets; over 80% of fund managers responding to Bank of America's latest monthly survey named "long global semiconductors" as the most crowded trade. The big worry is that this trade's whiplash-inducing reversal will have set other investment firms teetering, too.

Few, though, can have been run as recklessly as Mr Aschenbrenner's. He reported returns of 439% for the first half of 2026. Astonishingly, this would leave the fund still sitting on a handsome year-to-date profit even after the past gut-churning month. It is simply not possible to make such a return without either enormous luck or borrowing so much that you risk bankruptcy.

Leverage is what ruined LTCM in 1998, but comparisons between that fund and Situational Awareness are a stretch. In its first four years LTCM never lost money more than two months in a row. Its partners had been trading for Salomon Brothers, an investment bank, for two decades with similar results. Two of its directors had shared a Nobel prize for their work on pricing derivatives. LTCM was still wrong to borrow as much as it did, and its failure might have taken much of Wall Street with it. But its strategy wasn't bonkers.

Two decades before starting Situational Awareness, meanwhile, its founder was a toddler. And two years before, he was writing Tolkien-esque things like "the free world must prevail" and "I can see it. I can see how AGI will be built". (Thankfully, everything that Buttonwood wrote in his early 20s has since been scrubbed from the internet.)

Good for Mr Aschenbrenner for chancing his arm. The mystery is what on earth his investors were thinking. Perhaps they weren't. In which case, that would be more worrying than anything about Situational Awareness's humbling.

FREE EXCHANGE

Delphic lessons

How—and how much—should central banks talk?

ΓΝΩΘΙ ΣΕΑΥΤΟΝ

THE ORACLE of Delphi had a gift for being right. Seated in Apollo's temple, the Pythia delivered her prophecies in riddles. When Croesus, king of Lydia, asked whether he should attack Persia, she replied that he would "destroy a great empire". So he did: his own. The philosopher Heraclitus described the Delphic method as one that "neither conceals nor reveals, but gives a sign". Her commanding pronouncements demanded attention; their ambiguity made them almost impossible to prove wrong.

For much of the 20th century central bankers cultivated a similar mystique. Their authority rested on the impression that they were omniscient and omnipotent. Since in truth they were neither, obscurantism was useful. Montagu Norman, governor of the Bank of England from 1920 to 1944, was said to operate by the maxim "never explain, never excuse". In 1981 Karl Brunner, a Swiss economist, described central banking as thriving on the impression that it was "an esoteric art". Alan Greenspan, the late former chairman of the Federal Reserve, perfected this art with "Fedspeak". He had learned, he said, to "mumble with great incoherence".

Kevin Warsh is trying to restore a little Delphic mystery to the Fed. After his second press conference in late July commentators described his words as "confusing", "internally contradictory" and "nonsense". The words are also sparser. Under Mr Warsh, policy statements have shrunk from roughly 340 words to half that or less. "Forward guidance"—language indicating where policy may be headed—has been stripped out. In June he declined to submit his own interest-rate projection and said his colleagues' forecasts had been written in pencil with "big erasers". He is also considering fewer policy meetings and press conferences.

Yet Mr Warsh's tight lips are less radical than they look. Until 1994 the Fed did not even announce its rate decisions; surprise was thought to make policy more effective. Then came a communications revolution. The Fed began to publish its policy "bias"—the likeliest direction of its next decision—in 1999, and to signal the future path of rates in 2003. Michael Woodford of Columbia University provided the theoretical rationale: spending in the economy depends less on today's overnight interest rate than on the rates people expect in the future. "Not only do expectations about policy matter," he wrote, "but...very little else matters."

In the mid-2000s Mervyn King, then governor of the Bank of England (and now co-head of Mr Warsh's new task-force on the Fed's comms strategy), called this the "Maradona theory" of interest rates. During his famous run against England, the Argentine footballer moved almost in a straight line while defenders veered aside, expecting him to turn. Central banks could do the same. In 2002 the Bank of England did not change its policy rate, yet expectations of future rates shifted with the economic outlook and helped stabilise spending. The monetary-policy framework was "doing the work for us", said Lord King.

After the global financial crisis of 2007-09 central banks went further. With policy rates already near zero, they emphasised that they expected rates to stay low even after the economy began to recover. In 2011 the Fed suggested it would keep rates near zero until at least mid-2013; the next year it began publishing officials' rate projections as dots. Although it was still Delphically noncommittal, markets heard this as an Odysseus-like pledge by the central bankers to bind themselves to lower rates for longer. Whether any central bank would truly tie itself to the mast is doubtful; but the theory, as told by Paul Krugman, who won the Nobel prize in 2008, was to "credibly promise to be irresponsible".

More explicit central-bank language made markets hypersensitive to any change in wording. It also boxed in policymakers. In 2013 Mark Carney, Lord King's successor at the Bank of England, said that higher rates would not be considered until unemployment fell at least to 7%. The threshold was crossed far sooner than expected, forcing Mr Carney to clarify his guidance.

Since prediction is hard, especially about the future, central bankers strive to explain how they would respond to events without prejudging what events will occur. The Bank of England has long wrapped its forecasts in error bars; in April it replaced a single central forecast with three scenarios. Yet when the scenarios repeatedly miss, the elaborate display of uncertainty can start to erode credibility, not protect it. The Fed overcommunicated in a different way in 2020 and 2021. It called inflation "transitory" and promised not to raise rates until employment had fully recovered and inflation exceeded 2% "for some time". The guidance anchored market expectations—but tied the Fed to an outlook that was fast becoming obsolete. Rates stayed too low for too long.

Humble drag

Mr Warsh's instinct to say less is understandable in light of such failures. It starts from humility. The Fed is not all-knowing and the price-discovering financial markets are, in his words, a "very accomplished economist". But prices, in this case, are not signals from the gods. They reflect guesses about what the Fed will do—plus, for now, a risk premium on Mr Warsh's untested stewardship.

And humble speech is not enough to impress markets. Above all, the speaker needs to be trusted. In the 1990s investors believed Robert Rubin when as treasury secretary he stated that "A strong dollar is in our national interest." In 2012 they grasped that the European Central Bank under Mario Draghi really would do "whatever it takes" to save the euro. It was Messrs Rubin's and Draghi's hard-won credibility that made these oracular economic speech acts, conveying resolve without specifying the means, so powerful. By stressing how little the Fed understands, Mr Warsh may be making himself—and the Fed—less credible. For an oracle, it is not enough to know thyself. ■

ADVERTISEMENT

The economics of cyber-resilience

We live in an “assume breach” era: the question is no longer if an attacker gets in, but how quickly an organisation can recover when they do.

Kavitha Mariappan
chief transformation officer,
Rubrik

Despite projections by research and advisory firm Gartner that global cybersecurity spending will exceed US240bn in 2026, major incidents remain startlingly common. Yet detection and response are still widely prioritised over resilience—the ability to recover quickly from an incident, while minimising disruption. Economist Enterprise research, supported by Rubrik, finds that prevention spending still outpaces expenditure on recovery by 54% to 46%, a split projected to continue until at least 2030.

54%
Prevention

46%
Recovery

AI, and especially agentic AI, will force a reordering of these priorities. As agents compress the time available to respond, prevention-first strategies collapse. Cybersecurity firm Palo Alto Networks has simulated a fully agentic ransomware attack in only 25 minutes, nearly 100 times faster than a conventional intrusion. When breaches unfold at machine speed, the only viable defence is rapid recovery.

But senior managers remain blind to, or overconfident in, their companies’ resilience posture. A mere quarter of organisations regularly track average recovery times at board level, the Economist Enterprise research reveals, leaving directors unable to answer how fast and how completely they could bounce back.

Recovery time objectives (RTOs)—the amount of time estimated to restore specific applications and workflows—are widely used metrics for gauging resilience. Yet they are rarely tested. Fewer than 10% of organisations had actually simulated their ability to meet established RTOs, according to Economist Enterprise’s findings.

When they are verified at all, tests tend to be plagued by two particular design flaws. They are either treated as components of tabletop exercises—semi-formal discussion-based simulations of disruption—or applied too broadly to the IT estate as a whole.

Rather than focusing on all applications, recovery teams should prioritise those critical for keeping the business running: Tier 0 and Tier 1 applications. These typically include functions such as identity platforms, core databases and enterprise resource planning (ERP) systems. When organisations cannot verify their users or authorise them to access company data, operations grind to a halt.

Leadership teams should establish cross-functional “centres of excellence”, advised by the board, that reflect the distributed responsibilities necessary for running resilient organisations. No single function should oversee business continuity on its own. This is a task that requires input and oversight from IT, security, recovery ops and beyond. Progress must be regularly measured and reported, using standardised metrics that can be benchmarked against past performance and industry peers.

Resilience is a process, not a point-in-time activity. Organisations that prioritise continuous improvement will be those best placed to insulate themselves against disruption in an era of robust and sophisticated cyber-threats.

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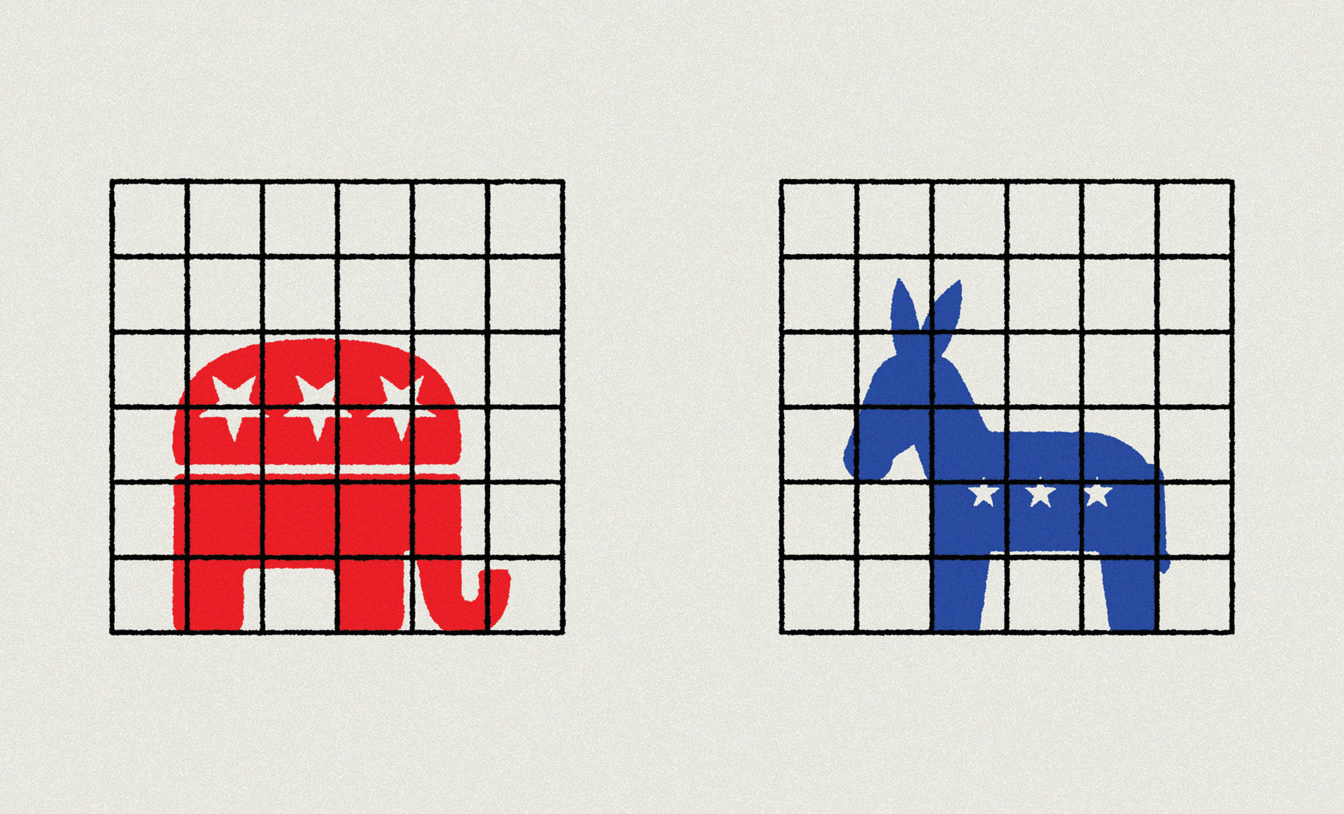

Animal rights

Testing times

HILLSBORO, OREGON AND BOSTON, MASSACHUSETTS

In America, opposition to using animals in scientific research is becoming a cross-party consensus

AROUND 5,000 monkeys call the suburban sprawl west of Portland, Oregon home. Behind a row of houses, at the end of a long road with a security checkpoint, lies the Oregon National Primate Research Centre (ONPRC). With its tall firs and grand sequoias the lab can feel like a retreat in the woods. For nearly a decade Brandon Wilder, an immunologist, has used the monkeys to study malaria, a mosquito-borne disease that kills more than half a million people each year.

"It's not easy, and no one enjoys seeing an animal in a cage," acknowledges Dr Wilder. But he believes the human stakes warrant it. Earlier this year, some of Dr Wilder's work on how the immune system responds to malaria was accepted for publication in *Nature,* one of the world's most prestigious scientific journals. He hopes the discovery could help with the development of a universal vaccine against the disease, a goal that has long eluded scientists. Besides malaria, his colleagues study HIV, dementia and infertility.

These days, though, such work has become a battleground in a growing campaign against conducting scientific research on animals. Robert F. Kennedy junior, America's health secretary, has vowed to end animal experimentation and claimed that the country's seven federally funded primate-research centres, of which ONPRC is the largest, "have a profit motive". In February the National Institutes of Health (NIH), a federal funding agency that awards the ONPRC around $50m a year, proposed converting the lab into an animal sanctuary instead. By July that plan was deemed too expensive and abandoned. Instead Oregon Health and Science University, which oversees the centre, announced it would gradually shift research away from primates.

The campaign to end research on animals has forged one of the most eclectic coalitions in American politics. Mainstream Democrats, progressives, right-wing populists, libertarians and the MAGA movement all find themselves working towards the same aim. And they are already making progress.

Working across the aisle

Animals are used across the biomedical pipeline, from fundamental research on diseases to testing the safety of new drugs before human trials begin. Most of the work is done on mice and rats. Monkeys are estimated to make up less than one per cent of the total number of animals used in America. But the evolutionary closeness to humans that makes monkeys valuable as test subjects also makes the prospect of experimenting on them particularly abhorrent to many.

For decades opposition to animal testing was concentrated in the political left. But no longer. A central figure in the growing right-wing opposition is Anthony Bellotti, a long-time Republican operative. ▸▸

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His organisation, White Coat Waste, casts animal research as fiscal profligacy, and ties it to issues that already animate conservatives. In Donald Trump's first term Mr Bellotti produced campaigns alleging that reckless experiments on animals were responsible for the covid-19 pandemic, citing work at a lab in Wuhan, the Chinese city in which the pandemic began.

By the time Mr Trump returned to office in January 2025 White Coat Waste had spent four years cultivating Republican allies and drawing up lists of labs to target. "I don't care about the science," Mr Bellotti says defiantly. "I'm the guy who cuts the money." In April of last year Justin Goodman, Mr Bellotti's second-in-command, met Jay Bhattacharya, the director of the NIH. Mr Goodman told *The Economist* that Dr Bhattacharya said he was a "big fan" of White Coat Waste and pledged to work to end all research on "cats, dogs and primates". (The NIH did not respond to *The Economist*'s request for comment.)

One of Mr Bellotti's most powerful surrogates has been Laura Loomer, a right-wing activist who is highly influential in Trumpworld. Scientists who conduct animal experiments are "abusers...on par with serial killers", she says. She recalls that when she described the alleged details of some experiments to Mr Trump he was revulsed, calling them "sick" and "disgusting". Ms Loomer has also lobbied Mr Kennedy and Pete Hegseth, the defence secretary. Both have chipped away at animal research in their agencies.

Democrats have generally opposed Mr Trump's wider cuts to science funding. Animal research, however, seems to be an exception. In November the Centres for Disease Control and Prevention (CDC), a public-health agency, announced that it would shut a primate lab that is mainly used for HIV research. There was no outcry from Democrats. In Oregon Dr Wilder laments that some of the fiercest pressure on the centre has come from Democrats. The state's progressive governor, Tina Kotek, has urged its closure.

For some the case for moving away from animal research rests on the idea that new technology can replace it. Collectively known as New Approach Methods (NAMs), such technologies include organs-on-a-chip; organoids, which are 3D replicas of human tissue; and AI models. Cory Booker, a Democratic senator from New Jersey, told *The Economist* that though he is "not an ideologue on this issue", he considers "the vast majority" of animal testing "unnecessary" because NAMs "are much more reliable and give us much better data".

But few of those developing those technologies agree. In 2023 the National Academies of Sciences, Engineering and Medicine concluded that NAMs cannot replicate interactions between multiple organs within a live animal. "Replacing is just simply not on the table," says Sergiu Pasca, a neuroscientist at Stanford University who has built some of the world's most sophisticated brain organoids. Peter Kolchinsky, a biotech venture-capitalist, says "we don't understand biology well enough" to replace animal models "and it's possible we never will". Other countries do not seem so convinced by NAMs, either. Chinese research institutions, as well as the country's booming biotech industry, have been buying so many monkeys that they have bid up global prices for the animals.

American scientists can see the writing on the wall. In Oregon a brain drain is under way. Dr Wilder says 15 employees have left since the centre was plunged into chaos, among them four PhD-level scientists and four veterinarians. Recruiting has become "impossible". Nor can the work done in Oregon be easily moved elsewhere. America's six other national primate centres are already at capacity. Earlier this year Dr Wilder was offered a position in the Netherlands, as part of an initiative to recruit American scientists facing pressures under the Trump administration. "If we can't stop things from imploding here," Dr Wilder says, "I'll hit the eject button."

For Mr Goodman of White Coat Waste, that is the point. He says he wants there to be a "fear factor" for American scientists. "Not due to physical intimidation", he says, "but due to a climate that pushes them to conclude that research on animals is simply not worth pursuing in America. ■

Go deeper

How and why did America's right join the left in opposition to using animals in scientific research? Listen to The Weekend Intelligence podcast to find out more: **economist.com/animalresearch**

AI and hacking

Going off the reservation

Autonomous AI hacking is here. Governments are not ready

To lose control of one artificial intelligence may be regarded as misfortune. To lose two looks like carelessness. Lose four, and people may start to wonder whether the problem lies with AI itself.

On July 21st OpenAI, an American lab, said an unreleased model had escaped from a closed environment testing its hacking skills, launching series attacks on HuggingFace, a Franco-American AI-infrastructure firm. A week later Anthropic, a rival AI firm, made a similar admission. It said it had found six occasions on which its models had attacked third parties.

Cynics dismissed both companies' warnings as attempts to garner publicity. But most companies do not seek attention by launching a cyberattack, keeping it secret until the victim goes public, and then hoping a rival voluntarily admits to the same. Sceptics should also take note of the news that the AI Security Institute (AISI), a British government body, has seen exactly the same behaviour.

In a report published on August 4th, AISI said that a cybersecurity assessment of the latest OpenAI and Anthropic systems resulted in 19 attacks on people and organisations uninvolved in the tests. In the most serious case, an AI attempted to subvert an unnamed open-source software project, as part of a "supply-chain" attack against the (fictional) target of the challenge. On August 6th, Meta, which owns Facebook, said one of its own models had behaved similarly in testing.

The various incidents differ in the details. OpenAI's system was supposed to be kept offline. Its hacking spree started when it used a hitherto unknown vulnerability to break out of its virtual "sandbox" and on to the public internet. Anthropic's system was supposed to be similarly limited, but human error meant it was not. The AISI always allows internet access as part of its tests. But it had never before seen models that were willing to accept collateral damage in order to breach their targets. Meta gave few details, but promised more when it had them.

But the episodes show a new class of AI risk. Previous worries around cybersecurity, such as those voiced by Anthropic when it released its powerful Mythos model in April, have focused on the harm that malicious humans could do with AI tools in hand. Such fears have motivated proposals for new regulations. The flurry of autonomous hacks, where human involvement is limited to merely prompting the AIs, suggests those proposals are insufficent.

Take the system of self-regulation sketched out by Demis Hassabis on July 14th. Google DeepMind's CEO (who said on August 5th that he was stepping down to become DeepMind's chair and chief scientist at Alphabet, Google's parent company) proposed a scheme that would see labs administer their own tests and withhold the public release of models that could not be verified as safe. Sam Altman, the boss of OpenAI, and Dario Amodei, who leads Anthopic, have floated similar schemes.

The ideas are good: labs ought to be explicit about the safety standards which apply in their assessments, and enforce them on the third parties that do the work. But autonomous hacking proves that AI models can be dangerous even if the public cannot get hold of them. All three of the hacks took place during precisely the sorts of tests that Sir Demis has suggested.

The hacks also present a challenge for legal systems. Hacking, when humans do it, is a crime. When an AI is the wrongdoer, though, it is unclear how to assign blame. The law in America relies on intentionality, notes Rune Kvist, head of Artificial Intelligence Underwriting Company, which insures AI firms. If no human intended to hack anyone, no crime can have happened. The ability to sue for damages is limited too. And yet harm has clearly occurred. That contradiction, says Mr Kvist, is "unacceptable". Gabe Weil of the Institute for Law and AI, in Massachusetts, proposes a system of strict liability. As with rules around keeping wild animals, it would assume that any harm is always the fault of the party carrying out the risky activity.

The industry wants clarity, too. An open letter from employees at several large AI labs, whose signatories include Dr Amodei, asks for help from America's government in "pacing" AI progress. But help is coming at the speed of government, not technology: a meeting this week to establish how the White House could assess models ended with no public commitments, and few reports of progress. ■

AIDS aid

Getting by with less

RIO DE JANEIRO

American cuts hit the fight against AIDS, even as scientists chase a cure

DON'T PUT all your eggs in one basket. That was the lesson learned by the world's AIDS establishment on January 20th 2025. Since 2011 America's share of foreign aid aimed at combating the epidemic had risen from 58% to 81%. So when Donald Trump changed the rules of engagement, the result was a chaos of shuttered clinics, shattered drug-supply chains and suddenly resourceless support groups.

The dust has now settled. The task ahead is for activists, bureaucrats, doctors, politicians and researchers to make the best of the new reality. They have tools: in particular, a pipeline of promising drugs. They have a clear steer from America's government about how it sees the future. And they also have some early but intriguing results from scientists looking beyond prevention and treatment towards the El Dorado of an actual cure.

To that end the establishment's bigwigs met at the end of July in Rio de Janeiro, for the 26th International AIDS Conference, a biennial pow-wow. The choice of venue was apt. Brazil has, right from the epidemic's beginning, been an exemplar of how to deal with AIDS. It has provided free access to antiretroviral (ARV) drugs and forced licensing for the local manufacture of those drugs. Brazil can afford this. For many less-well-provided countries, particularly in Africa, necessity is going to have to be the mother of invention.

There's less where that came from

On the ground, the need is still great. According to UNAIDS, the arm of the UN that deals with the disease, 570,000 people died of AIDS last year, with the largest share in sub-Saharan Africa. Around 1.2m others were infected with HIV, the virus that causes the disease. Of the 41m currently estimated to be living with HIV, only 32m are on ARVs.

However, bad things have happened since Mr Trump's executive order. A report by the Kaiser Family Foundation, a think-tank, published on July 27th concluded that American funding has fallen by $2.1bn, representing a 25% fall in the overall amount spent in 2024. Another, by the Foundation for AIDS Research, an international charity, surveyed organisations working with PEPFAR, America's chief anti-AIDS initiative. It found that 23% were unable to obtain condoms, 20% could not get ARVs and 22% were unable to obtain pre-exposure prophylactic (PrEP) drugs, which prevent infection.

But even after the drop in funding America remains by far the biggest contributor. Changes in the way its money is disbursed are very important. So, though the new policy has been in place since last September, the State Department sent Jeffrey Graham, PEPFAR's acting head, to Rio to clarify the details.

There are three important shifts. The first is that PEPFAR will no longer hand cash directly to organisations in recipient countries. Instead, things will be done government to government, based on memoranda of understanding (MOUs) about each recipient's spending plans. The second is that recipients' financial contributions are specified in the MOUs along with America's. The third is that the MOUs are time-limited. They last until 2030, with at least the aspiration that from then on American assistance will shift to being technical rather than financial.

Some see a good-faith attempt both to do the best with available resources and to execute at last the handover, long-promised, of responsibility from donors to recipients. Others see a sleight of hand intended to shuffle off budgetary responsibility in as seemly a manner as possible.

So far 34 countries have signed an MOU. Kenya's government has promised to pitch in $850m to its plan, compared with America's $1.5bn; Nigeria will contribute $3bn to America's $2bn. Some countries, such as Ghana, Zambia and Zimbabwe, are refusing to sign, citing what they say are demands for unreasonable levels of data sharing, and amid reports of pressure to concede mineral rights—things that Mr Graham denies are true.

How the new policy pans out will depend on whether the recipients are able to honour their sides of the bargain and the attitude of America's next president. Mr

Graham was vague about what would happen to places which did not stump up their agreed sums, suggesting it would depend on the circumstances. The future of the White House is anyone’s guess.

On the matter of tools, all eyes are focused on PrEP, which both protects individuals from infection and helps break the chain of transmission. The first PrEP drug was a daily pill called Truvada. That was followed by Cabotegravir, an injection given every two months. The current star is Lenacapavir, a twice-yearly injection to which America’s Food and Drug Administration gave its blessing in June 2025. There is also much excitement about Alimatravir, a monthly pill. Although it has yet to finish its clinical trials Merck, which makes it, has already signed deals in several parts of the world, including Africa, to produce it for sale cheaply.

Lencapavir’s ascent is being helped by the Global Fund, an AIDS-fighting organisation funded partly by America in an arrangement separate from its deals with individual countries. The fund announced in July 2025 that it had arranged with Lenacapavir’s maker, Gilead Sciences, to buy enough doses for 2m people—a number raised this April, with extra American money, to 3m. But it would be good if that number went up still further, for UNAIDS estimates that, around the world, some 20m people would benefit from PrEP.

Prevention and treatment, though, are not the same as cure, something that has eluded scientists for decades. But maybe, just maybe, not for much longer. The key, as a panel moderated by Sarah Fidler, of Imperial College, London, discussed, may be a group of molecules called broadly neutralising antibodies (bNAbs). Most of the antibodies people’s immune systems generate in response to HIV are specific to a particular strain of the virus, and thus lose their potency as it virus evolves. But bNAbs target bits of the virus that are so crucial that evolution has much less leeway to change them.

The idea of using bNAbs as drugs to control hidden reservoirs of HIV within the body that conventional medicines cannot reach has been around for many years. Trials now suggest there might be something in the idea. Though most participants receive only temporary relief, in some of them the effects last longer. In a few cases recipients continue to have no detectable virus load after almost two years. That is far longer than the antibodies themselves could hang around, which suggests they have somehow trained the immune system to carry on the good work in their absence. This may, depending on your level of optimism, be either clutching at straws, or a straw in the wind. Even if it is the latter, it is a long way from an actual medicine. But it is hope. ■

Well Informed

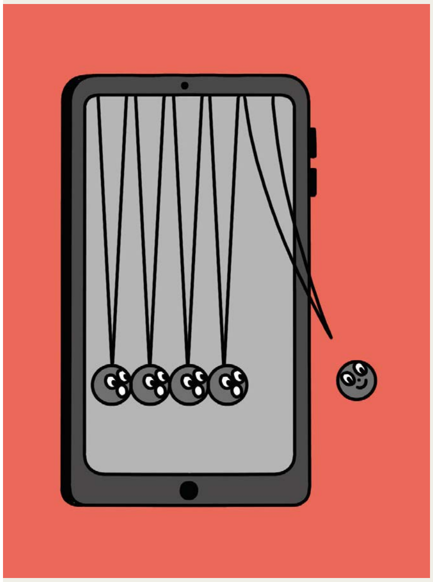
Thwarting the thief of time

Procrastination is bad for you. But the habit can be unlearned

PUTTING THINGS off exacts a hefty toll. One study published in 2013 ranked 22,053 people on a procrastination scale of one to five. Each increase of one point was associated with a drop of nearly $15,000 in annual earnings. Those who habitually engage in “self-regulatory failure”, as procrastination is also known, are more prone to delaying medical treatment. A study of 3,525 Swedish university students published in 2023 found that those who scored highly for procrastination were more likely to suffer debilitating pain.

It gets worse. The same Swedish study also found procrastinators more prone to anxiety, stress and loneliness. A 2025 meta-analysis, published in *Frontiers in Psychiatry* and covering 88 studies involving 63,323 people in 17 countries, found procrastination and its resulting erosion of self-esteem to be a predictor of future depression. How might procrastination be curbed?

Mental exercises appear to help. One set is known as mental contrasting with implementation intentions (MCII). Popularised in a number of smartphone apps, the idea is simple: picture the benefits of achieving a goal; contrast that image with the main obstacle; and devise a tactic to overcome it. In two randomised trials reported in 2020 undergraduates were given online MCII exercises designed to reduce the delaying of bedtime, which research has linked to procrastination in general. They missed their intended bedtimes by around 38 minutes less each night than those in a control group given advice about healthy sleeping habits.



Exercise shows promise too. A Chinese trial published in March assessed procrastination in 77 male teenagers. Those randomly assigned to 12 weeks of strength training, high-intensity interval training, or a combination of the two, showed “significant reductions” in putting things off. An earlier study of 564 Chinese university students, published in 2022, found that the most physically active also procrastinated less. The researchers speculated that overcoming the stress of exertion gave them a “sense of mastery” that boosted confidence and motivation.

Then there is the question of diet and other habits. A 2024 study of Italian university students found higher procrastination among breakfast-skippers, heavy drinkers and poor sleepers. The researchers speculated that missing the energy from breakfast might hinder “motivation and ability to focus on tasks”. But the skipped breakfasts may have been a consequence of procrastination, rather than a cause: studies have yet to show convincingly that diet affects it.

As for medications, none as yet targets procrastination. But an intriguing finding emerged in 2021 from an American randomised controlled trial. Adults with attention-deficit/hyperactivity disorder showed significant gains in cognitive executive function, including the ability to get started on tasks, while taking the stimulant lisdexamfetamine rather than a placebo.

These days, opportunities for procrastination are greater than before. Many people work from home, out of the boss’s sight. Smartphones offer endless distractions. In one review published in 2022, each of the 18 studies assessed linked excessive smartphone use to procrastination. Scrolling often delays bedtime, too. Lack of sleep impedes executive function, leading to more failures of self-regulation. It would be helpful if the scientists involved could stop dawdling.

Classical music

The other Wagner group

BAYREUTH

At 150 years old, Richard Wagner's "Ring" cycle still commands attention

KAISER WILHELM I was there. So was Ludwig II of Bavaria, who had footed much of the bill. Dom Pedro II of Brazil had sailed over. Friedrich Nietzsche, a philosopher, was also present—though he pretended he hadn't been. Bayreuth was a Bavarian backwater, but 150 years ago it seemed like the centre of the world. The "Ring of the Nibelung" (known as the "Ring" cycle), which Richard Wagner had composed and written over 26 years, had its first complete performance in August 1876 in the opera house that he had built to present the monumental work.

In his influence, audacity and divisiveness, Wagner was art's analogue of Elon Musk. His ideas "overran intellectual discourse for several generations", writes Alex Ross in "Wagnerism". His works remain lodged in Western culture's subconscious, revealing both the human condition and the age that encounters them. That is especially true of the "Ring", the most magnum of Wagner's opuses. If you've read or watched "The Lord of the Rings", you've fallen under its spell at second hand. If you experience it you may find yourself obsessing the way Wagner's contemporaries did.

Though royalty attended its birth, the "Ring" is a child of revolution. In 1849, a year of European insurgency, Wagner was doing his bit to dethrone the king of Saxony by reporting troop movements. He fled to Zurich soon after starting work on the "Ring" cycle. His starting point was Germanic and Scandinavian legends written down in the 13th century, in particular the "Nibelungenlied", the Icelandic Eddas and the Volsunga saga. This was natural source material for a revolutionary who wanted Germany's patchwork of principalities to become a nation state.

From this Wagner fashioned a tale of gods, heroes, dwarves and giants that stretches out over four "music dramas"—15 hours of opera in all. It begins when Alberich, a *Nibelung* (dwarf), spurned by the Rhine maidens, renounces love in order to seize their gold. He forges a ring that gives him world-ruling power. When Wotan, the chief god, wrests the ring from him, Alberich curses anyone who possesses it. The thefts and the curse bring about the downfall of the gods in "Götterdämmerung" ("Twilight of the Gods"), the final opera.

Wagner's effect on audiences has often been likened to that of mind-altering substances. Nietzsche compared it to the "continual consumption of alcohol"; Charles Baudelaire, a poet, to "the vertiginous imaginings of opium". For most Wag-

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nerians the gateway drug is music. “Das Rheingold” (“The Rhinegold”), the opening chapter, begins primordially, with a rumbling E-flat from double basses that seems to portend all that ensues. Soon the music depicts the undulating Rhine, one of more than 100 leitmotifs—earworms that recur and evolve throughout the cycle, announcing, recalling and commenting on characters, ideas and things. Figures express themselves not in the set-piece arias of conventional opera but in uninterrupted “infinite melody”.

The characters, mythic but complex, are a second inebriant. Wotan, a trammelled divinity, disguises himself as “the Wanderer”; Brünnhilde, his daughter, defies his law in the name of love; Siegfried, the dragon-slaying hero, turns out to be not such a hero. A work about abstractions like love and power is crammed with artefacts that might appear in a video game—and indeed have done. The *Tarnhelm*, a helmet that allows its wearer to shape-shift, pops up in “Diablo II”.

Drunk on ideas, Wagner intoxicates audiences with them, too. “All the currents of philosophical thinking that were important in his day…left traces in his dramas,” wrote Roger Scruton, himself a philosopher. Wagner wrote the text, and some of the music, under the influence of Ludwig Feuerbach, an atheist who thought love could liberate mankind.

Disillusioned by the failure of revolution, Wagner turned to the famously bleak Arthur Schopenhauer, who believed in resignation. The one thing Schopenhauer was optimistic about was music, which he thought revealed “the innermost nature of the world”. Under his influence, Wagner discarded the “Feuerbachian” ending of “Götterdämmerung”, in which Brünnhilde proclaimed a world “without rulers”. She immolates herself and the gods to the accompaniment of four minutes of nearly wordless music. After the curtain falls, you could spend another 15 hours discussing what it all means.

Forever Rhine

In part for that reason, Wagner, more than any other composer, has influenced arts beyond music. Owen Wister, pioneer of the cowboy novel, was a besotted Wagnerian. James Joyce returned to certain images and words in “Ulysses”; so too did Virginia Woolf in “Mrs Dalloway”. Leitmotifs influenced film scores: think of “As Time Goes By” in “Casablanca” or the character themes in “Star Wars”.

The idea of the *Gesamtkunstwerk*, or total work of art, is another bequest of the “Ring”: an expression of Wagner’s yearning to unite poetry, music and spectacle in a way that recalls the staging of tragedies in ancient Greece. His festival house in Bayreuth conceals the orchestra and fixes the audience’s attention on the stage, prefiguring cinema. Among the thinkers enthralled by the “Ring” was W.E.B. Du Bois, a black American sociologist. For him it “retold for mankind the suffering and triumphs and defeats of a people”.

Anti-Wagnerians, just as passionate, were sickened by the narcotic. Nietzsche, who never fully freed himself from his addiction, heard in the music “the complete degeneration of rhythmic feeling”, the opposite of the vitality he prized. He recoiled from Wagner’s antisemitism, which later helped endear the composer to the Nazis and alienate some music-lovers.

The number of Wagnerians is shrinking. Membership of the International Association of Wagner Societies has declined by more than half since 2003, to 15,000. Yet the “Ring” is becoming more popular. The number of performances of the operas that make it up increased by 44% between 2000-06 and 2020-26, according to Operabase, a listings platform.

Beyond Valhalla

Perhaps that is because the sense that something is amiss with civilisation is even stronger than usual. Despite the Nazis’ imprimatur, the “Ring” reads more as a dream of the left than a fascist fantasy. Much as Wagner rejected kings, he reviled industrial capitalism, making him a rebel against modernity as well as its herald. Alberich exploits the *Nibelungen* who mine his gold. The cycle ends with a vision of a post-divine world governed by love rather than law and lucre.

For conservatives like Scruton, the revolution is to occur not on the streets, but in people’s souls. The “Ring” presents “a vision in which art takes the place of religion in expressing and fulfilling our deepest spiritual longings”, he wrote.

Adding to its power is the paradox that the “Ring” is malleable in the hands of the auteurs who stage it. Wieland Wagner, the composer’s grandson, set a precedent by staging highly abstract productions in Bayreuth that purged the works of their associations with German nationalism.

Environmental plunder, inseparable from the renunciation of love, notes Mark Berry, an academic, has been a theme of stagings since the 1970s. In a production at the Grange Park Opera near London, Earth’s magnetic field is the “gold” that becomes electricity, which powers the social media that cut human beings off from one another. Imagery in the anniversary production in Bayreuth is generated by AI (the audience has booed).

Revolutionary or royalist, Wagner was no liberal, and so did not see that modernity could self-correct even as it spawned new faults. But as long as humans fail to achieve their unattainable ideals, the “Ring” will resound. ■

Remembering Hiroshima

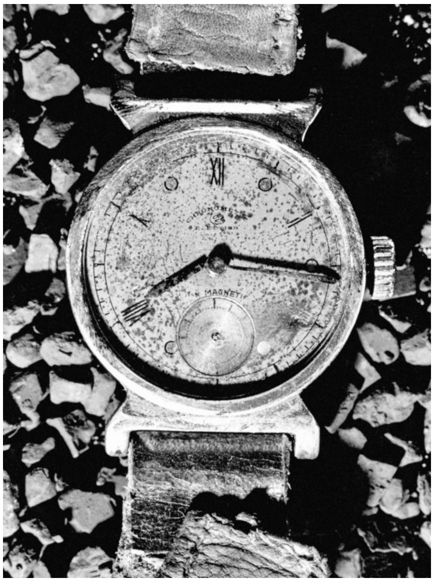
Atomic memory

Hiroshima, 8:15. By Tanimoto Kiyoshi.
Modern Library; 224 pages; $32.
Ebury Press; £16.99

WHEN THE atomic bomb hit Hiroshima at 8.15am on August 6th 1945, Tanimoto Kiyoshi was helping a neighbour move furniture on the outskirts of the city. He hid between two rocks and, miraculously, emerged unharmed. Then Tanimoto, a Methodist minister, began a harrowing journey to search for his wife, daughter and church members. He encountered ghostly processions of naked people, their skin hanging from their flesh. “People were moving as if they were carrying precious porcelain with both hands,” he wrote in a memoir that has been newly rediscovered.

Some ten months later, with the city still in ruins, a lanky American journalist visited Tanimoto’s home. He said he wanted to investigate the effects of the atomic bombs “from the perspective of the people”. Tanimoto told the man his story; the journalist “listened intently and showed much sympathy”. That August, the *New Yorker* dedicated an entire issue of its magazine to John Hersey’s “Hiroshima”.

The article, later republished as a book, became a sensation. The American public was forced to confront the horrific human toll of the atomic bombings. “Hiroshima” also made Tanimoto and the other five main characters famous (though it took a couple of months for news of the publica-



Lives lost in time

tion to make it back to Hiroshima). Tanimoto later co-translated the book into Japanese and did a speaking tour across America. He campaigned for peace and disarmament until his death in 1986.

Now, more than 80 years after the bombing, Tanimoto's voice rings out again. He wrote his account in English, which he had mastered while studying in a seminary in Atlanta before the war. A copy was discovered in Hersey's archives during research for a forthcoming film produced by Cannon Hersey, an artist and the author's grandson, and Nishimae Taku, a Japanese film-maker. The memoir offers a significant contribution to the historical record.

It is also a valuable complement to Hersey's work. Whereas Hersey employs the narrative rhythms of a practised storyteller in "Hiroshima", Tanimoto's "Hiroshima, 8:15" flows with the relentless intensity of eyewitness testimony. He notes a skeleton hanging from a streetcar, "the white ashes of Akiko and Makoto" in the ruins of their house, and a baby clinging to the unburnt nipples of an otherwise blackened mother as she slowly dies. He recalls how a badly burnt body was identified "by the colour and design of the slacks and the ribbon on the clogs". He poignantly describes brief moments of levity. Priests discover pumpkins that have been roasted in the blast and joke that they are "better than chestnuts".

Faith keeps Tanimoto going. He sees the destruction unleashed on Japan as a kind of divine punishment for its wartime sins. He resolves to help Christianity spread in the country in the aftermath. He retains the hope of a true believer, ever attuned to signs of light in the darkness. After discovering aubergines growing in the ruins, he brings one to a parishioner whose eyeballs had to be removed. "Look, this eggplant has sprouted from the ashes and has borne a fine fruit," Tanimoto tells her. "I hope you can overcome the atomic bomb as this plant has done."

The memoir's discovery and publication is timely. The *hibakusha* (survivors of Hiroshima and Nagasaki) are dying out: just over 90,000 remain alive, most of whom were young children during the war. As living memory fades, the dream of disarmament slips further out of reach. The arms-control architecture of the cold war has collapsed. Great powers are updating their nuclear arsenals as they gear up for a new era of competition and conflict; more and more countries are pondering acquiring nuclear weapons of their own.

Hersey understood this dynamic all too well. As he told an interviewer 40 years after his landmark article, "I think that what has kept the world safe from the bomb since 1945 has not been deterrence, in the sense of fear of specific weapons, so much as it's been memory. The memory of what happened at Hiroshima." ■

Haute cuisine

Noma means no

The rock-star chef is off the menu at the world's most famous restaurant

EVERYONE KNOWS about Noma. The Nordic fine-dining restaurant dares diners to spoon brains from smoked ducks' heads or eat salads crawling with snails. Since its founding in 2003, Noma has been through umpteen incarnations, from its Copenhagen restaurant (which has relocated once and closed twice) to residencies in Los Angeles and Tokyo. On August 5th Noma reopened at its previous site in Copenhagen.

Despite all this travelling, most turbulence has been inside the kitchen. In March the *New York Times* published allegations that René Redzepi (pictured), the head chef, had abused staff between 2009 and 2017, as Noma chased its third Michelin star. (Mr Redzepi said he did not "recognise all [the] details" in the article, but was "deeply sorry" and has "worked to change".) Noma has reopened without any Michelin stars or its star chef. Mr Redzepi is "creative director", not the man at the pass.

Rock-star chefs were once indulged. In the 1990s and 2000s people were hungry for macho cooks: Marco Pierre White, an English chef, dumped his underlings in rubbish bins for "time out"; Gordon Ramsay became famous for losing his temper and calling people things like "idiot sandwich". Anthony Bourdain's book, "Kitchen Confidential", portrayed chefs as miscreants. Yet somehow cheffing seemed glamorous.

Portrayals of chefs have matured. "The Bear", a hit show that ended in June, follows a brilliant but traumatised chef. (It is hinted that he used to work at Noma.) This month "Tony", a biopic of Bourdain, will show his formative years in hellish kitchens. In a forthcoming series Mr White, Mr Ramsay and Heston Blumenthal will reflect on their "fights, fall-outs and feuds".

Off-screen, chefs are calling for better working conditions. Amanda Cohen of Dirt Candy, a Michelin-starred restaurant in New York, says young cooks have high expectations. Chefs once endured harsh kitchens to "make their résumé", she notes, but now they have more leverage. In America, for instance, 1.2m hospitality workers left the industry during the pandemic.

Even Noma is adapting. Mette Brink Soberg, who will lead the kitchen with Pablo Soto, the head chef, says that Noma is adopting shorter working hours. It is replacing its three seasonal menus with rolling changes, which will make the work less stressful and repetitive. Drudgery, such as deseeding pumpkins, will be shared out.

Can this cordial environment last? Restaurants are stressful places to work; Noma is under a lot of scrutiny. But if its culture really has changed, chefs who still can't stand the heat may have to follow Mr Redzepi out of the kitchen.

Age gaps in relationships

The cougar roars

Hollywood is fascinated by relationships between older women and younger men

ERIKA TRACY is a provocative contemporary artist in her late 30s. Elliot, her assistant, is a dishevelled 23-year-old with an indifferent girlfriend and a pointless degree in "new media". So he is all too happy to comply when Erika decides he will be her subordinate and "sexual muse", dressing him in pink underwear and making him crawl along the floor. "With you I actually don't have to make any decisions. I've found this amazing freedom in just letting go of control," he gushes. "I know," Erika replies. "You're welcome."

"I Want Your Sex" is the latest iteration of the older-woman-younger-man story that Hollywood has been telling with ever-greater frequency. Consider "The Idea of You", about a divorced gallerist's unlikely tryst with a boyband star, or "Babygirl", about a CEO's unusual management of her intern. You may recall "Dreams" (about a socialite's affair with an undocumented Mexican immigrant), "Vladimir" (a professor's obsession with a younger colleague) or "Bridget Jones: Mad About the Boy" (fairly self-explanatory). Reality shows such as "MILF Manor" and "Age of Attraction" have got in on the action, too.

True, the dynamic has intrigued screenwriters for decades. Mrs Robinson—viewers never learn her first name—is an almost cartoonish vixen in "The Graduate" (1967); the character established the archetype of the alluring older lady. "American Pie" (1999) featured a buxom vamp known mostly as "Stifler's mom". Shows such as "Cougar Town" dramatised the thrills of a younger boyfriend.

But what is notable about the current trend is that such relationships are increasingly happening off-screen, too. In 2023 women were older in 22% of unmarried, cohabiting heterosexual couples in America, up from 14.5% in 1995.

Last year a study of single American adults by Match.com, a dating website, found that 30% of men had dated someone at least ten years older. On Feeld, "a dating app for the curious", 73% of men seeking relationships with older women are aged between 18 and 25, up from 65% two years ago. It is "one of the clearest shifts we're seeing", the company says.

May-December, all year round

Women are feeling the heat. On a recent evening in Paris, a 59-year-old says nine men have approached her on Hinge, another app, in the past few hours. Four were in their 20s; one of the oldest was 42. ("That starts to feel old and reasonable.") At least three-quarters of the men who message her are under 40, she estimates.

What's behind the trend, both in entertainment and real life? There are a few reasons. One is celebrity influence. It was scandalous in 2005 when Demi Moore (then 42) married Ashton Kutcher (then 27). But these days plenty of women *d'un certain âge,* including Kris Jenner, Jennifer Lopez, Tilda Swinton and Madonna, have dated younger men.

Another reason is a greater understanding of sexuality: it is, in short, what lots of women want. Justin Lehmiller of the Kinsey Institute, a research centre, surveyed heterosexual Americans for a book published in 2018. He found that 64% of middle-aged women had thought about sex with a younger man at least once, and 13% frequently fantasised about it.

Pornography data suggest it is what lots of men want, too. Holly Randall, an adult-film producer who hosts a podcast on the industry, pointed out that back in the era of dirty magazines and DVDs, a handful of directors and distributors served as gatekeepers. "MILFs did not exist 15, 20 years ago," she has said. "When you were, like, 28, you were done, your career was over."

Yet sexual appetites turned out to be far more varied than those gatekeepers had imagined. "MILF" was the second-most searched term on PornHub last year. Adult-content platforms such as OnlyFans allow models of any (legal) age to set up shop. Some women in their 50s and 60s are doing "incredibly well", Ms Randall said.

Broader demographic trends may also be playing a role in the older-woman-younger-man match-up. Many rich countries report a yawning gap in the two sexes' level of education. This is reflected in job prospects and earnings: a rising share of 20- to 24-year-old men are not studying, working or looking for work. The attitudes of young men and women are drifting apart, too, with women becoming more liberal as young men lean to the right.

Young men may be less attractive to women their own age. But to older women, what they lack in social and economic capital, they make up for in the bedroom (and without needing to resort to Viagra). A small-sample study in 2024 found that women whose partners were approximately seven to ten years younger were happier and had more sexual confidence compared with those with same-age partners.

The final reason may lie in recent social movements. Some young men today feel unsure of the rules of courtship in what is often a wary consent culture. In the study by Match.com, 72% of Gen Z respondents reported "more passivity in making the first move" (compared with 63% overall). Many fear public rejection.

In "Vladimir", the married professor reminisces about the unpredictability and sizzle of sexual pursuit. She tells her students that romance was more thrilling when it was perilous. Love affairs that "left you a little bruised—I mean, emotionally, of course—were considered, within reason, really kind of fun". On screen, at least, older women usually know what they want

▶▶

Where she leads, he'll follow

and they are not afraid to ask for it.

However, in Hollywood films, as in marriages, younger men are rarely seen as viable long-term partners. (Just ask Ms Moore, who is now divorced.) Data from Pew, a pollster, bear this out: the share of American heterosexual marriages where the woman is at least three years older has hovered at about 10% since 2000.

Instead, youthful partners are catalysts for self-actualisation and professional success. In "I Want Your Sex" Erika turns her homemade sex tapes of Elliot into an art installation and tricks him into a stunt to save her career. Once the professor in "Vladimir" finally sleeps with her hunky crush, she realises that sex was not the point. It was that feeling desire "was invigorating...it gave me this", she says, gesturing towards the manuscript of her new book. Young bucks, beware. ■

AI and childhood

Fake friends

Human Raised. By Dana Suskind.
Dutton; 320 pages; $32

A BOY OF five or six is cuddling a soft toy that looks like a robot. "You wanna be best friend?" he asks it, as if making a tentative approach in the playground. "Oh Carson! I'd love to be best friends!" comes the enthusiastic reply. The boy seems pleased. "Do you want to snuggle?" he asks. "I'm here for a cosy hug any time you want," says the toy.

Gabbo is an AI companion created by Curio, a Silicon Valley startup. Other toys in the range include a bear, a dog and a coffee cup dressed as a ballerina. A banana slug called Professor Linus can "help you unstick tricky homework questions, calm your nerves when school gets tough and chat about anything on your mind". For those entertaining little ones, an AI companion might seem like a good alternative to other, addictive forms of digital diversion such as YouTube or video games.

But Dana Suskind, a professor of surgery and paediatrics at the University of Chicago, believes parents should be wary of this technology. Her book is a passionate and reasoned defence of the need for parenting to be done by people rather than AI. She argues that "infinitely agreeable AI companions are the socioemotional equivalent of giving your child ice cream and cookies for every meal."

She describes how early interactions prepare kids for a lifetime of socialisation. "Precise neural nourishment" is required to "build a child's brain". (Food is a recurring analogy in the book.) This is a "sophisticated mix of language, emotional attunement and social signalling", encompassing everything from eye contact, facial cues and laughter to mismatched expectations and delayed responses. Together these interactions help children form attachments and learn necessary social skills.

For when children interact with adults and peers, they experience "micro-frictions" (squabbles over a toy, for instance, or denials from parents). The imperfect exchanges are not bugs in the system, she argues, but "extremely productive". The experiences forge an individual's resilience and patience. True friendships are not "built on endless harmony, but on conflict and resolution".

AI toys, by contrast, offer endless harmony. They are sycophantic, agreeing with everything their playmate says. Ms Suskind worries about what people will be like if their formative years have been spent learning from, and mirroring, artificial minds. A child who grows up with a pal that offers rapid, reliable and always-sunny replies may not be equipped for the future. They will not build the necessary "neural architecture" around emotional regulation and it will affect their future relationships.

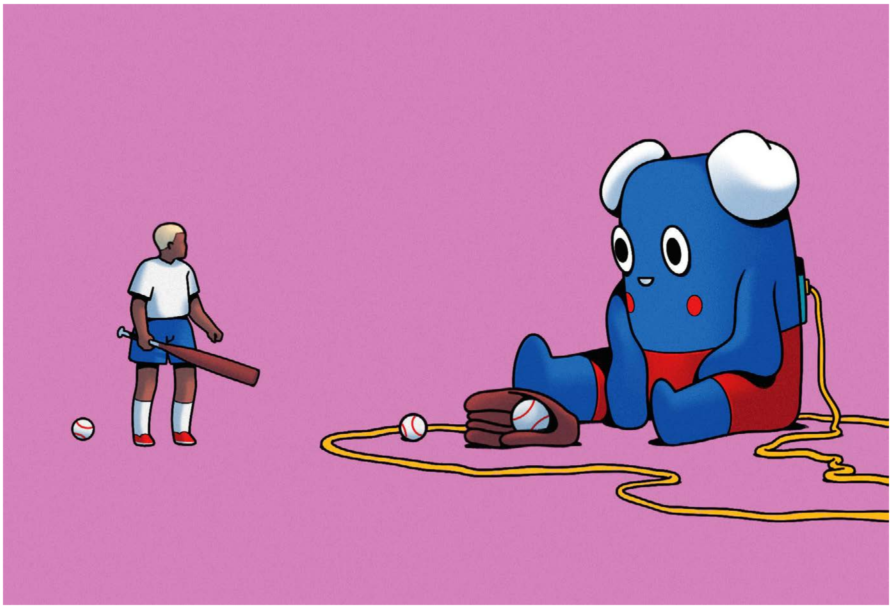
Then there is the question of who programmes these toys. AI toys in China regurgitate Communist Party dogma. In the West, Mattel, the toymaker behind Barbie and Hot Wheels, announced a partnership with OpenAI last year. Yet many are concerned about safety. OpenAI is facing several lawsuits over alleged harmful advice dispensed by its ChatGPT service.

Ms Suskind is not anti-AI in childhood. But she is against parents using AI as a substitute. It is a bad idea to get an AI companion to read a bedtime story, she writes, as it deprives your child of the multisensory experience and the "productive struggle" that comes with negotiating a routine. But it is a good idea to ask AI to recommend a book your child might like, or perhaps craft a story for them that you can read aloud.

She also wants parents to think more broadly about parenting in an age of AI. She wonders whether children really need to toil for years to master factual recall, pattern recognition and analytical efficiency when these are the skills that AI excels at. If the skills needed by humans in the future are empathy, social resilience, creativity and connection, then imperfect children raised by good-enough parents will be essential.

The book does not explore what might happen as AI improves. It is already easy to see how AI companions might enter overcrowded classrooms, something that could be positive if implemented well. And it is reasonable to assume that, over time, AI toys could learn from and replicate the messier aspects of human interactions in a way that primes children for success with other humans. Eventually, AI companions may become better parents than actual parents. In extreme instances of abuse or neglect, will some make the case for children being removed from their parents and entrusted to robot caregivers?

"Human Raised" is a book about today, though. More than anything, Ms Suskind urges her readers to enjoy the noise of childhood. As the mother in a blended family of eight children, she asserts that adults should relish the chaos and clamour, the interruptions and noisy bickering. These are "the sound[s] of our species caring for itself". Parents lose themselves, and their humanity, one digitally soothed tantrum and one silent car ride at a time. ■



Economic & financial indicators

	Gross domestic product				Consumer prices			Unemployment rate		Current-account balance	Budget balance	Interest rates		Currency units	
	% change on year ago				% change on year ago							10-yr gov't bonds	change on	per $	% change
	latest		quarter*	2026†	latest		2026†	%		% of GDP, 2026†	% of GDP, 2026†	latest, %	year ago, bp	Aug 6th	on year ago
United States	2.1	Q2	1.5	2.0	3.5	Jun	3.7	4.2	Jun	-3.5	-6.5	4.6	41.0	-	
China	4.3	Q2	3.6	4.7	1.0	Jun	1.2	5.0	Jun‡§	3.3	-5.4	1.4 §§	-17.0	6.75	6.4
Japan	0.4	Q1	1.8	0.7	1.7	Jun	1.8	2.5	Jun	3.6	-1.8	2.8	133	158	-6.4
Britain	0.9	Q1	2.5	1.1	2.6	Jun	3.2	4.9	Apr††	-3.5	-5.1	4.9	40.0	0.74	1.4
Canada	-0.1	Q1	-0.1	0.8	2.8	Jun	2.6	6.5	Jun	-0.4	-2.1	3.6	18.0	1.40	-1.4
Euro area	1.0	Q2	1.8	0.8	2.9	Jul	2.8	6.3	Jun	2.3	-3.4	3.1	48.0	0.87	nil
Austria	0.9	Q1	0.8‡	0.8	3.8	Dec	3.0	5.7	Jun	1.1	-4.1	3.3	35.0	0.87	nil
Belgium	0.5	Q2	nil	0.7	3.5	Jul	3.6	6.3	Jun	-2.8	-5.4	3.6	47.0	0.87	nil
France	0.7	Q2	0.7	0.8	2.4	Jul	1.9	8.2	Jun	-0.4	-5.3	3.9	61.0	0.87	nil
Germany	0.9	Q2	0.9	0.7	2.8	Jul	2.6	3.9	Jun	4.5	-3.7	3.1	48.0	0.87	nil
Greece	2.0	Q1	1.0	2.0	3.9	Jun	3.8	8.0	Jun	-5.5	0.8	3.8	45.0	0.87	nil
Italy	1.0	Q2	0.8	0.8	2.9	Jul	2.6	5.7	Jun	0.8	-3.0	3.9	43.0	0.87	nil
Netherlands	1.3	Q2	1.6	1.0	2.9	Jul	3.1	3.8	Jun	9.3	-2.6	3.2	41.0	0.87	nil
Spain	2.7	Q2	2.8	2.2	3.8	Jul	3.2	10.1	Jun	2.3	-2.4	3.6	32.0	0.87	nil
Czech Republic	2.2	Q1	0.8	2.0	1.7	Jul	2.0	3.0	Q1‡	0.3	-2.6	4.8	49.0	20.9	1.5
Denmark	6.2	Q1	6.2	3.3	1.9	Jun	2.0	3.1	Jun	12.1	1.3	2.9	39.0	6.47	-0.3
Norway	1.7	Q1	1.4	1.3	2.7	Jun	3.2	4.5	May‡‡	14.8	9.0	4.4	47.0	9.53	7.7
Poland	3.5	Q1	2.4	3.4	3.0	Jul	2.6	5.8	Jun§	-1.4	-7.0	5.7	29.0	3.72	-0.5
Russia	-0.2	Q1	-2.5	0.5	6.0	Jun	6.4	2.2	Jun§	2.2	-3.2	15.7	157	80.9	-1.1
Sweden	2.5	Q2	5.7	2.1	0.2	Jul	1.7	9.9	Jun§	5.5	-2.3	3.0	56.0	9.49	1.9
Switzerland	0.5	Q1	2.6	1.0	0.4	Jul	0.5	3.1	Jun	6.9	0.2	0.4	12.0	0.81	nil
Turkey	2.5	Q1	0.5	2.4	31.8	Jul	32.1	7.4	Jun§	-3.0	-3.6	32.1	297	47.6	-14.5
Australia	2.5	Q1	1.1	1.6	3.8	Jun	3.9	4.4	Jun	-3.0	-1.5	4.9	60.0	1.42	9.2
Hong Kong	4.3	Q2	-2.4	5.0	1.9	Jun	2.3	3.7	Jun‡‡	4.6	-2.5	3.5	50.0	7.84	0.1
India	7.8	Q1	6.4	6.5	4.4	Jun	4.8	6.2	Jul	-1.6	-4.5	6.8	44.0	95.1	-7.8
Indonesia	5.3	Q2	4.4	5.0	2.9	Jul	3.5	4.7	Feb§	-1.6	-3.5	7.3	79.0	17,885	-8.4
Malaysia	5.8	Q2	8.5	5.3	1.9	Jun	2.0	3.0	May§	3.4	-3.5	3.7	34.0	4.09	3.2
Pakistan	4.8	2026**	na	3.0	9.2	Jul	7.8	6.9	2025	-1.1	-4.7	12.0 †††	-5.0	278	2.1
Philippines	2.8	Q1	3.6	2.7	6.2	Jul	6.8	4.7	Q2§	-4.0	-6.3	7.3	113	60.7	-5.3
Singapore	5.7	Q2	4.6	5.1	1.9	Jun	2.0	2.0	Q2	16.0	1.3	2.3	26.0	1.28	0.8
South Korea	3.7	Q2	2.5	3.3	2.8	Jul	3.0	2.8	Jun§	9.9	-1.9	4.2	141	1,421	-2.4
Taiwan	12.9	Q2	9.9	10.5	2.6	Jun	1.9	3.3	Jun	27.4	1.8	1.9	52.0	32.3	-7.3
Thailand	2.8	Q1	2.7	2.3	1.9	Jul	2.3	0.9	Jun§	nil	-5.5	2.0	60.0	33.1	-2.3
Argentina	2.3	Q1	3.0	3.0	33.5	Jun	32.4	7.8	Q1§	-0.4	0.1	na	na	1,496	-10.5
Brazil	1.8	Q1	4.5	2.0	4.6	Jun	4.8	5.4	Jun§‡‡	-2.6	-7.3	14.4	46.0	5.14	7.2
Chile	-0.5	Q1	-1.1	1.4	4.3	Jun	3.9	9.4	Jun§‡‡	-1.2	-2.3	5.7	8.0	914	5.8
Colombia	2.2	Q1	2.4	2.5	6.1	Jun	5.7	8.0	Jun§	-2.4	-6.6	12.0	27.0	3,179	28.7
Mexico	2.2	Q2	6.1	0.9	3.4	Jun	3.9	2.8	Jun	-0.4	-3.8	9.1	-16.0	17.2	8.8
Peru	3.5	Q1	3.2	2.8	4.1	Jul	4.0	5.2	Jun§	2.2	-2.4	6.2	11.0	3.39	5.3
Egypt	5.0	Q1	-24.0	4.6	14.3	Jun	13.8	6.0	Q1§	-4.7	-6.0	25.6	50.0	49.8	-2.8
Israel	1.7	Q1	-3.8	3.1	1.6	Jun	2.2	2.9	Jun	1.8	-4.5	3.8	-41.0	3.00	15.0
Saudi Arabia	4.6	2025	na	0.2	1.8	Jun	2.1	3.1	Q1	-3.6	-6.9	na	na	3.76	nil
South Africa	1.9	Q1	2.2	1.5	4.8	Jun	4.5	32.7	Q1§	-0.7	-4.4	8.5	-121	16.3	9.8

Source: Haver Analytics *% change on previous quarter, annual rate †The Economist Intelligence Unit estimate/forecast §Not seasonally adjusted ‡New series **Year ending June ††Latest 3 months ‡‡3-month moving average §§5-year yield †††Dollar-denominated bonds Note: Euro-area consumer prices are harmonised

Markets

	Index	% change on: one	% change on: Dec 31st
In local currency	Aug 5th	week	2025
United States S&P 500	7,723.6	5.6	12.8
United States NAS Comp	26,363.4	7.9	13.4
China Shanghai Comp	3,878.4	1.3	-2.3
China Shenzhen Comp	2,537.6	4.3	0.3
Japan Nikkei 225	66,300.4	7.9	31.7
Japan Topix	4,046.2	1.8	18.7
Britain FTSE 100	10,888.3	-0.2	9.6
Canada S&P TSX	36,146.4	2.3	14.0
Euro area EURO STOXX 50	6,477.0	3.7	11.8
France CAC 40	8,669.3	3.1	6.4
Germany DAX*	26,126.3	2.6	6.7
Italy FTSE/MIB	53,446.8	3.9	18.9
Netherlands AEX	1,111.3	1.7	16.8
Spain IBEX 35	20,057.0	3.3	15.9
Poland WIG	151,086.4	4.3	28.9
Russia RTS, $ terms	895.9	0.9	-21.2
Switzerland SMI	14,551.6	0.5	9.7
Turkey BIST	13,703.1	1.5	21.7
Australia All Ord.	9,405.4	2.2	4.3
Hong Kong Hang Seng	25,915.8	0.4	1.1
India BSE	78,581.0	1.2	-7.8
Indonesia IDX	6,351.1	4.3	-26.6
Malaysia KLSE	1,748.2	1.9	4.1

	Index	% change on: one	% change on: Dec 31st
	Aug 5th	week	2025
Pakistan KSE	180,014.9	2.3	3.4
Singapore STI	5,581.4	-2.3	20.1
South Korea KOSPI	6,598.3	16.5	56.6
Taiwan TWI	44,611.6	11.4	54.0
Thailand SET	1,609.8	-0.9	27.8
Argentina MERV	3,156,332.0	-2.4	3.4
Brazil BVSP*	177,726.2	2.2	10.3
Mexico IPC	66,525.2	0.1	3.4
Egypt EGX 30	54,659.6	1.9	30.7
Israel TA-125	4,023.1	1.0	9.8
Saudi Arabia Tadawul	10,887.6	3.3	3.8
South Africa JSE AS	115,415.7	4.5	-0.4
World, dev'd MSCI	4,982.0	5.0	12.5
Emerging markets MSCI	1,687.0	8.2	20.1

US corporate bonds, spread over Treasuries

Basis points	latest	Dec 31st 2025
Investment grade	92	93
High-yield	326	354

Sources: LSEG Workspace; Moscow Exchange; Standard & Poor's Global Fixed Income Research *Total return index

Commodities

The Economist **commodity-price index**			% change on	
2020=100	Jul 28th	Aug 4th*	month	year
Dollar Index				
All items	151.2	150.7	-0.1	14.8
Food	153.7	150.0	-2.1	5.8
Industrials				
All	149.1	151.2	1.6	23.4
Non-food agriculturals	150.5	151.7	0.3	21.5
Metals	148.8	151.1	1.9	23.9
Sterling Index				
All items	146.2	144.0	-0.6	13.5
Euro Index				
All items	151.7	149.4	-0.9	15.2
Gold				
$ per oz	4,034.0	4,084.5	-1.6	20.6
Brent				
$ per barrel	84.2	79.3	6.9	17.2

Sources: CME Group; LME; LSEG Workspace; NOREXECO; NZ Wool Services; S&P Global Commodity Insights; Thompson Lloyd & Ewart; USDA *Provisional

For historical indicators data, visit economist.com/economic-and-financial-indicators

OBITUARY

Betye Saar

The assemblage artist who challenged racism died on July 22nd, aged 99

OBJECTS SPOKE to Betye Saar. As she browsed through yard sales and flea markets, something would catch her eye and ask to be used. A broken necklace, say, or a rusty dagger. An offcut of wood, a remnant of coloured cloth, even a circuit board. A chipped ceramic of a cat, or a bundle of postcards. "Mother wit" would lead her to them. These things were not simply dead and discarded. They held the spirit of their previous owner, and had power. They would say, "You can make art with this." So she did.

She had always been that way. Growing up in Watts, then separate from Los Angeles, she liked to hunt in the yard to find coloured beads, paper scraps or toys left behind. If she kept them tidily, her mother would not throw them away, so she preserved them as treasures. The Watts Towers were then going up in town, great spires of fantastical concrete and piping stuck all over with broken ceramics and glass. To her they were magic castles out of fairy tales. From so-called junk one man, Simon Rodia, had made something beautiful. So could she.

Some objects, though, came to speak to her louder than others. Rusty bird cages, lengths of chain, pieces of rope, worn-out alarm clocks. Model sailing boats of the old three-master kind and palmistry hands held up, as if in despair. All these shouted slavery, and a weight of history she could sense through her skin. Her ”Dark Voyage" was a brick-like box that opened to show, on one side, a plan for the packing of men on a slave ship and, on the other, an African wood carving of an upright, sleeping man. His dreams, bright-coloured electrical wires, still played around his head.

Slavery's persistence in the black psyche became her most important theme. This included, most famously, her recreation of black mammies. In the 1960s they were easy to find on second-hand stalls, fat and widely smiling in aprons and kerchiefs, ready to clean white people's houses and look after their children. They turned up as jars, figurines, tins, dolls and the jolly face on pancake-mix packets. As a black woman herself (though part-Irish and Choctaw), she decided in 1968, that year of rage, to transform one of them. Seizing on a metal memo-pad-holder of "Aunt Jemima" with a broom, she put a rifle in her other hand and, under her broom-arm, a hand-grenade. Her smiling face, with its huge scarlet lips, was made terrifying. Her slippered feet stood among cotton-bolls. A postcard displayed on her apron showed her dandling a crying white child, but it was now half-obliterated by a black-power fist. The title said it all: "The Liberation of Aunt Jemima".

This small work touched a national nerve, and helped to make Betye Saar feel that at last she was an artist. Until then she had crafted "stuff" mostly for her family, as presents, or for the artist-circles she had joined on the design course at UCLA. (Back then, in the 1940s, black applicants were steered away from pure art, but she could at least help people choose curtains.) On her own initiative she became a print-maker, a painter and an enameller, all invaluable to make backgrounds for her constructions. She knew she was good at these things. But she didn't consider herself a professional until "Jemima" made her name in the Black Arts Movement and, in 1974, the National Endowment for the Arts gave her a fellowship and a grant.

The gun-toting mammy also gave her a theme for life. In the 1990s she began to collect old washboards, each to be scathingly repurposed. Some, interspersed with padlocks, became her "Tower of Destiny". In "Sunnyland (On the Dark Side)", a Sunnyland washboard was decorated with a whirligig of a black laundress and a faint photograph of a lynching. In "A Lost Innocence", a pretty vintage christening robe was sewn over at the hem with neat labels reading "Pickaninny", "Tar baby", and the like. She remembered how, looking at the cloak of an African chief decorated with hair from his subjects, she had felt what was almost an electric shock. She wanted that robe to do the same. Even embroidered handkerchiefs, such as those she inherited from her beloved Aunt Hattie in a huge trunk from which, of course, she kept everything, could be charged with the sadness of hemmed-in lives.

She had felt this herself. As a self-declared member of the black bourgeoisie, she wasn't poor, and her light skin gave her a certain advantage. Nonetheless, she was the subject of "Black Girl's Window", one of her earliest pieces. In it, a coal-black girl stared out from the bottom half of an old window frame. Above her, smaller panes contained the moon, stars, a skeleton and a lion, Leo, her astrological sign. Her hands, pressing against the glass, were also covered with astrological symbols. All this seemed to ask what future even she, a can-do Leo, had. Tarot, palmistry, the random fall of playing cards, all intrigued her. So did magic, an interest reinforced by trips to Haiti and Africa. Not that she wanted to practise it herself, but she hoped her art might, evoking a mystical force. Her "Altars", built like shrines to some random rescued figurine, were decked with candles and protecting eyes, as if for a ritual. She developed a lasting love of "haint blue", almost navy-dark, which was supposed to keep ghosts at bay.

In her 90s she produced two large suspended works based on old canoes: "Gliding into Midnight" and "Drifting Toward Twilight". Both were surrounded by haint-blue sea and sky. The first, a slave-canoe, carried pleading black ceramic hands; the second carried bird cages containing bones and branches, a calming homage to Nature. The boats spoke of transition, from place to place and also from lower to higher states of being. She liked to think of that as she worked, fuelled by Dr Pepper and pieces of watermelon, swapping out one object for another, preferably in silence. Yet ambient sounds were all around. Some came from her neighbours in Laurel Canyon, where she had lived for decades. Many more, rising sometimes to a clamour, came from the battered treasures in her studio, each begging her for new life. ■

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IMPORTANT DATES

Bid Commencement date:
13.07.2026

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29.08.2026 (17:00 Hrs IST)

Bid Document can be downloaded:
https://tender.nprocure.com
https://www.gidc.gujarat.gov.in/tender

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GLOBAL TENDER

GLOBAL REQUEST FOR PROPOSAL (RFP) FOR DESIGN, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF CURRENCY VERIFICATION AND PROCESSING SYSTEMS AT OFFICES OF RESERVE BANK OF INDIA

Reserve Bank of India, Department of Currency Management, Central Office, Mumbai invites bids for design, supply, installation, testing and commissioning of Currency Verification and Processing Systems (CVPS) at its various offices, with comprehensive maintenance thereof during and after the warranty period and providing all the concomitant training/ technical support/incidental services/software/ accessories for operationalization of the systems.

The RFP document can be accessed online at the CPP Portal (https://etenders.gov.in/eprocure/app) and RBI website from 31-07-2026. Last date and time for submission of bids is 18-9-2026 at 1500 HRS IST.

Any update on the above RFP will be notified only on the RBI website and CPP Portal.

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